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ORIGINAL ARTICLES.

A RENAL SARCOMA IN AN INFANT NINE MONTHS OLD. OPERATION. RECOVERY.*

JOHN C. COTTON, M.D., MEADVILLE, PA.

Although sarcomata are of frequent occurrence and are more generally distributed through the various tissues of the body than any other tumors, thus making surgeons familiar with them, yet the history of the case here presented has some peculiarities, which, it is hoped, warrant its publication. Indeed, any operation, which even with the intelligent antisepsis of present-day surgery yields a mortality of nearly fifty per centum will always be of some professional interest. That nephrectomy in children for malignant diseases has such a mortality is shown in the extensive collation of reports of over 300 cases by Prof. Steele, published in THE MEDICAL AND SURGICAL REPORTER, February 1, 1896. Were the subsequent history given of all the cases operated upon, say for two or three years, doubtless, a much greater mortality would be shown to actually exist. This case is believed to be the youngest on record, save one of Schmidt's, upon which nephrectomy has been successfully performed for sarcoma.

Until quite recently the history of nephrectomy as a curative procedure for malignant growths was not reassuring to the aspirant for surgical distinction. "It is absolutely useless in a child," remarked Bland Sutton less than two years ago. "Nephrectomy for malignant diseases, in both adults and children, has been thus far a very fatal and a very unsuccessful operation," says an author in the *American Text Book of Surgery*, published in 1894. Another author reports two successful cases in a total of nineteen; while still another reports only two alive at the end of two years in a total of forty-three cases.

Russel Saeger, my little patient, aged nine months and ten days, had the unfortunate legacy of malignancy entailed by his maternal grandfather, who died with sarcoma of the hip. When three months old, a tumor as large as a lemon was discovered in his right side below the edge of the ribs. This, however, gave him no trouble and excited no

*Read before The Medical Society of Crawford County, July 1, 1896.

alarm until three or four months afterward, when colicky pains, accompanied by a diarrhœa, became a constant source of annoyance, not only to the little sufferer, but to the family as well and for this condition medical advice was first sought. When seen by the writer, the child was well nourished, notwithstanding the persistent diarrhœa, his appetite being still unimpaired. Nothing in his appearance indicated the cachexia peculiar to malignancy. There had been no hematuria. The tumor had increased slowly and gradually until the month previous to the time when he was first brought to my office, but during this month the mother claimed that it had increased in size fully one-half. From this history the inference would seem justifiable that the trouble was congenital, as such tumors usually are.

On January 2d, the patient was admitted to the Meadville City Hospital, and on examination a large, slightly-movable, solid tumor was found in the right hyperchondrium, the most prominent point of which was located two inches above the umbilicus and to the right of the mesial line. There was evidently no connection with the stomach or liver, but the attachment to the kidneys was evident. The circumference of the abdomen over the most prominent part measured twenty-five inches. On account of the family history and the rapid growth during the last month the diagnosis was a malignant tumor of the kidney, probably sarcomatous. At the urgent solicitation of the family, it was decided to give the little patient the benefit of whatever hope an operation might give in a condition that otherwise was without any.

On January 2, 1896, assisted by competent local surgeons, the operation was performed with every antiseptic precaution possible. An exploratory incision, two inches in length, was made in a line between the kidney and the prominence referred to, through which the feasibility of extirpation was ascertained. At this stage profound ether narcosis supervened which proved to be an embarrassing feature throughout the operation. After some delay and the vigorous use of stimulants hypodermatically, a slight rally took place when the incision was extended to eight inches, this length being found necessary for the enucleation of the tumor.

The incision was the transverse peritoneal recommended by Abbe. The adhesions were numerous, but most of them were separated by the hand. The growth was extra renal and developed along the line of the renal vessels, the adnexa being normal. Although extra renal, the attachments were to the kidney and the weight of the tumor had dragged the kidney from some of its fatty areolar connections with the spinal column. The enucleation completed, the kidney, with its capsule, were also removed. But a small quantity of blood was lost.

On account of the operation not being aseptic a drainage tube was inserted as a precaution, but was removed on the fourth day. The technic in common use in abdominal sections was now applied. Some infection occurred either through the drainage tract or from the divided ureter, as on the tenth day an exudate the size of a hen's egg appeared in this locality and discharged nearly two months, thereby retarding the convalescence. The recovery, however, was otherwise uneventful and now after the lapse of almost eleven months the little fellow is in excellent health. If the apparent case should continue for a period of two or three years, good hope might be entertained of its permanence. The operation was successful in the relief of suffering and in prolonging life and must emphasize, so far as a single case can, the correctness of the opinion of Kœnig and Abbe, that an operation should be performed in all cases of renal sarcoma in children so soon as a positive diagnosis can be made.

The tumor was encapsulated, on section had an encephaloid appearance and after a microscopical examination by a competent pathologist, was pronounced a small spindle cell sarcoma.

The after history of this case will be made public, should a recurrence of the disease take place, as in this manner only can the actual value of such an operation be fully determined.

A doctor is a man whom we hire for the purpose of telling stories in the chamber of a sick person till nature effects a cure or his medicine kills the patient.—*Seward.*

CHRONIC DUODENAL INDIGESTION.

JOHN B. SHOBER, M.D., PHILADELPHIA.

Chronic duodenal indigestion is a frequent disease of childhood. It rarely occurs in infancy, but is usually met with between the third and the seventh year. It is almost invariably caused by the continual administration of food unsuited to the age and digestive capabilities of the child, or of food which is digestible but which is given too frequently or in too large amounts. The mother with mistaken zeal, anxious for her child to grow up well nourished and robust, encourages and too often urges him to eat the most enormous meals. She denies him nothing, thinking that the more he eats the better. Children between four and six years of age are frequently allowed meat two and three times a day in addition to vegetables, eggs, milk, puddings and pastry.

It is not to be wondered at that the little one begins to have attacks of indigestion with gastric and abdominal pain, accompanied by vomiting and diarrhea. During the attack the daily diet is necessarily stopped, and the mother fears that her child is being starved when by the direction of the physician small quantities of milk and broth are ordered for a few days. So soon as the attack is over and the physician leaves she begins again to "feed the child up" in order to make up for lost time. Soon another attack comes on, which is relieved in the same way, and the trouble begins over again, to be repeated *ad infinitum*.

The mother becomes discouraged. The child does not thrive in spite of all her care. She endeavors to regulate his food by forbidding eating between meals, candy, sweets and pastry, but she plies him still with meat, rich milk, eggs, jellies, etc., and is surprised and worried that the tongue is always coated, the breath heavy, the bowels either costive or loose. Dark rings appear under the eyes, the child catches cold easily, is always peevish and fretful, and does not gain weight. The skin is dry, and patches of eczema are not unusual. The abdomen is distended and highly tympanitic. There may be no seat of tenderness on palpation. The liver is often congested, as shown by a slightly increased area of hepatic dulness. The most characteristic sign of the existing condition, however, is the character of the movements. They are highly offensive, often clay-colored and contain quantities of mucus.

The temperature during an acute attack is usually elevated, 101° to 102⅘° F., but subsides after the bowels have been opened by castor oil or small doses of calomel. Between attacks the temperature is usually normal, but it may remain at 99° or 99½° F. for many days at a time. There is no well recognized pathologic lesion. The mucous membrane of the duodenum is either hyperemic or congested.

By reason of this congestion, or perhaps owing to a plug of mucus in the orifice, the common bile duct cannot discharge the bile into the intestine; hence the clay-colored stools and the mild hepatitis which results in congestion of the liver.

The treatment of chronic duodenal indigestion is essentially by diet. Drugs are useful only as a means of relieving constipation or checking diarrhea. As a stimulant to digestion small doses of the tincture of nux vomica should be administered after each meal, and when the diet is increased and becomes more liberal the writer has obtained much benefit from the administration of taka-diastase in two and a-half grain doses after each meal. By the aid of this remedy the digestion of the starch element of the food is accomplished most satisfactorily and should be continued for a few weeks after the child is placed on a liberal diet and is apparently cured.

The following case illustrates the dietetic and hygienic management of a typical case:

A boy, six years of age, of fair muscular development and of good build

had been having frequent attacks of indigestion, with nausea and diarrhea alternating with constipation. He had a large appetite, and he was allowed and encouraged to eat liberally of anything he fancied that came upon the table. Meat was given to him twice a day, and nothing was denied him between meals. This had been going on for two years, and because he did not seem to thrive he was urged to eat still more liberally of all kinds of rich food. The attacks of indigestion were usually treated with small doses of calomel. The bowel movement was scarcely ever normal. The feces were usually clay-colored, very offensive and almost always contained more or less mucus. The skin was dry, and there usually existed a patch or two of eczema. The tongue was coated most of the time and the breath heavy; the abdomen was distended and distinctly tympanitic. The child caught cold easily and was not gaining weight as he should. The liver was slightly congested. The temperature was slightly above normal when the case came under the care of the writer. The line of treatment adopted in this case was that which is recommended by Dr. Thomas Morgan Rotch in his book on Pediatrics, first edition, page 866.

The child was ordered to bed for a week, and he was allowed five meals a day, the first being milk so modified as to contain fat 2, sugar 3, proteids 4, lime water 10. With this meal he was allowed a piece of thoroughly toasted bread. The second meal consisted of broth and toasted bread, with one ounce of claret in a half-tumbler of seltzer water. The third meal consisted of meat, toasted bread, claret and seltzer water; the fourth, of soup, toasted bread, claret and seltzer water; the fifth, of the modified milk and toasted bread. After each meal three drops of the tincture of nux vomica was administered. A tepid bath was given every morning. By the above diet we depend upon the proteid element of food and avoid the starches, sugars and fats, so that most of the digestion is performed by the stomach, relieving thereby the overtaxed duodenum.

The child rapidly improved in appearance. At the end of a week the temperature was normal. The fecal movements were natural both as to size and color. The skin had assumed a natural appearance. The tongue had cleared and the abdomen was less distended. Small quantities of fish and eggs were now added to the diet, and finally it was so increased that the child was eating three regular and unrestricted meals a day, and had entirely recovered. When the diet began to be increased two and a half grains of taka-diastase after each meal was substituted for the tincture of nux vomica. The case went on to complete recovery.

As relapses in this disease frequently occur, the greatest care should be exercised in regulating the diet for several months after apparent recovery.

The General Practitioner.

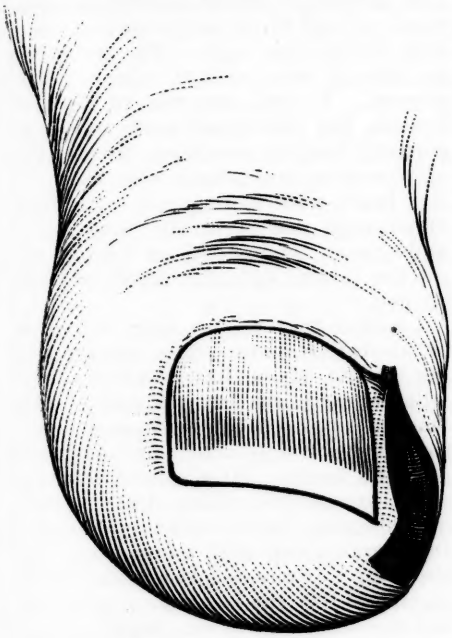
He must not walk his rounds for fear his patients think him poor.
And dearly do they love to see a carriage at their door;
And if his horse is fat, "He must have little work to do."
And if he's lean the reason is, "He starves the poor old screw."
Should he call upon his patients every day when they are ill,
His motive plainly is, "To raise a great big doctor's bill."
If he visits them less frequently—thus less'ning their expense—
The chances are he'll be accused of wilful negligence.
He must work all day and half the night, and never say he's tired.
For the public look upon him simply as a servant hired,
And should he take a holiday, he'll find, when he comes back,
Some patients have resented it by giving him "the sack."
Concerning money, he must seem indifferent to be,
And folks will think he practices from pure philanthropy;
When we hear about him boasting of the guineas that he earns,
We wonder if they all appear in his income tax returns.
About his own afflictions he must never say a word;
The notion of a doctor being ill is so absurd!
And when, perhaps from overwork, he's laid upon the shelf,
His sympathizing patients say: "Physician, heal thyself."

—*The London Lancet.*

RELAPSELESS CURE OF INGROWING TOE-NAIL.

EVAN O'NEILL KANE, M.D., KANE, PA.

I am aware that this trifling ailment scarcely deserves a place among surgical affections, yet its obstinancy and the pain and discomfort it occasions are



often most distracting to the patient and harassing to the physician.

By the usual operative methods, treatment of ingrowing toe-nail is anything but satisfactory. Prompt relief, it is true, follows the extraction, paring away or splitting and packing of the nail. But unless we completely destroy the matrix, the trouble will surely recur with the fresh outgrowth of the nail or the next tight pair of shoes. To cut or burn out the matrix is not only very painful, but often very difficult to accomplish, and at best our patient must be permanently deprived of the nail. The little operation which I am accustomed to performing is practically painless, and does not admit of the possibility of relapse.

It is as follows: The toe having been made thoroughly aseptic, a rubber tube tourniquet is cast around it and its tissues rendered insensible with cocaine or cold normal salt solution. I next split down the outer border of the nail about a line from its edge and beyond the region covered by the overlapping inflamed tissue. This piece of nail I then pull out with the tweezers in the ordinary manner.

I now cut a V-shaped notch in the outer border of the toe extending the full length of the nail. This is made wide enough to include all the hypertrophied, ulcerated and overlapping tissue, and is proportionately deep, (anywhere from an eighth to a fourth of an inch). The angles of the incision are now brought together, either by suture or strips of adhesive plaster, and an antiseptic dressing applied. If the patient will remain quiet, with the foot elevated for four or five days, the part will be completely healed within that period. No future trouble can be anticipated if a sufficiently large wedge of diseased tissue is removed, the new nail overlapping instead of being overlapped by the tender skin.

The "itch" (scabies) is often hard to treat successfully. Sulphur ointment well rubbed in will often allay, but frequently fails of curing because of the depth of the furrows made by the female acarus. It is therefore best, before the application of the ointment, to give the patient a thorough hot bath, lasting half an hour, with strongly alkaline soap, in order to soften the epidermis and uncover the burrow of the worm. The ointment may then be used with much benefit.—DR. HARE, (*Medical World*).

"Cook, how long did you boil those eggs?" "Nine minutes, mum." "But I told you that I wanted my eggs boiled three minutes." "Thot's thrue, mum,—but there was tree eggs, mum, an' tree times tree is noine."—*Harper's Bazaar.*

CARDIAC DISEASES AS ENCOUNTERED IN COUNTRY PRACTICE.*

E. S. DWIGHT, M.D., SMYRNA, DEL.

Prior to October, 1887, my medical practice was in the city, and for a part of that time I was assistant sanitary inspector of the New York Health Board, having all of the tenement houses in one-fiftieth part of the city allotted to me for inspection. Yet even in this field, as well as here in Delaware, I had found acute cardiac disease rather uncommon, prior to the summer of 1890. I occasionally had a case of rheumatic endocarditis or pericarditis, and I recall one instance where a pneumonic complication of scarlatina lit up a pericardial inflammation and one where pericarditis resulted, (the case of a New Haven hack driver) from long exposure to cold. Yet such cases were very uncommon.

When the great epidemic of Russian grip, in 1890, reached Smyrna, the disease seemed greatly modified by local malarial influences, and there were fewer deaths than might have been anticipated. But in the course of the succeeding summer a great many cases of acute nephritis were seen with concomitant heart lesions, wherever the grip had been allowed to run its course unchecked. Many of the cases were of the most alarming nature, and quite a number terminated fatally. These cases began with insomnia, profuse discharges of limpid urine, fever, etc. Dyspnea would then supervene, often extending to a degree of orthopnea with cervical breathing. In January of the following year I published an exhaustive article on the subject, giving a *resumé* of some thirty cases.

I had seen a hospital case years before, which puzzled the attending physicians at the time, but which threw a light on some of these more serious cases of my own. The case in question was pronounced to be one of aneurism of the abdominal aorta, and I was taken to the hospital to see it late at night by an attending physician, who was an intimate friend of mine. The bruit could be distinctly heard and the thrill distinctly felt. The arteries could be everywhere felt and seen pulsating, no matter how deeply placed they might be. The patient, a young colored woman, was in a high fever, and comatose. She died during the night. The next day an autopsy was held, at which I was present. To the surprise of the onlookers, the abdominal aorta was in a perfectly healthy condition, but a mass of ulcerating vegetations were found in the heart, with consequent infarctions of purulent matter in the lungs, liver and spleen. Doubtless there were others in the brain, but the head was not opened.

I believe that no less than six cases of ulcerative endocarditis corresponding to the above have unfortunately fallen to me in the last six years. The diagnosis was often difficult, and sometimes not correctly made until after the patient's death. All six terminated in coma, except one, where death ensued in consequence of a sudden movement. In several, a very high temperature was observed. In one case the thermometer registered 109° the last time it was used, and the temperature was rapidly rising at the time. It has been my misfortune more than once to be called in the evening to see a patient who had been feeling ill for several days, with weakness and dyspnea and some urinary disturbance, and with rapid heart action, but who had suddenly shown signs of improvement, perhaps sitting up nearly all day and developing a good appetite, but who had suddenly gone into delirium then into coma, followed by death.

I had a case of eclampsia in a primipara which I believe to have terminated in this way: The patient was treated with rectal injections of chloral and bromide. Labor occurred naturally, sufficient urine was excreted and was drawn at regular intervals with a catheter, and intelligence was for a time regained. A high fever succeeded, how-

* Read before the Delaware State Medical Society, June 9, 1896.

ever, with rapid pulse and labored breathing. Thirty-six hours later coma set in again, and death ensued.

In my last case of ulcerative endocarditis, I was able to demonstrate my diagnosis to my consultant by calling his attention to the precordial bellows murmur, and showing him that the abnormal sounds of the heart could be heard transmitted throughout the entire arterial system (we applied the stethoscope over the radial artery), and that the arterial pulsations could be everywhere seen and felt. This case was at first mistaken for one of apoplexy, and as the patient was a fairly robust young man of thirty-five, I bled at my consultant's advice. We had great difficulty in making the blood flow, but managed to withdraw some six or seven ounces. The primary affect was to relieve the stertorous breathing somewhat, but we had hardly left the house before convulsions announced the involement of fresh areas of brain substance. Ausculation at once cleared up the diagnosis.

In some of these cases of cardiac inflammation, the intoxication of the system seems to be due to the absorption of some morbid product through the abraded surface of the bladder, as in such cases antiseptic irrigation of that organ with mild astringent and alterative injections, gave almost instant relief. The relief would last for several days, when the treatment would have to be repeated.

Another case I recall proved one of pericarditis, complicating an attack of remittent fever without either rheumatic or renal element. The pain was referred to the left breast,and the patient, a young married woman, was convinced that it was a case of mammitis or "weed," as she termed it.

Another case was that of an elderly lady, who suffered severely with the typical Russian grip, in 1890, the disease taking its neuralgic form. Obstinate muscular rheumatism followed,and then endocarditis. Then came a series of embolisms. The first was in the left brachial artery, cutting off the pulsations at the wrist (a collateral circulation became established in the course of a week.) Then came an embolism in the lungs, causing great dyspnea (this also was recovered from.) The third embolism was in the right post tibial artery, causing dry gangrene of the foot and part of the leg. Then followed, in rapid succession, an embolism in one of the renal arteries and another in the brain.

A young man, who had caused a mitral lesion by overtraining for athletic sports while at college, came to me for treatment. In his case a varicose vein seemed to have formed in the right lung. This, suddenly bursting, formed an immense pulmonary apoplexy, the patient dying of asthenia when the clot began to break down.

Another patient, a hale, hearty and wonderfully well man of seventy-six, forcibly dilated his heart while rapidly wheeling a barrow load into his barn. A long illness, attended by frequent attacks of angina pectoris, ensued, the patient dying six months after the initial injury.

In gangrene following the continued fevers, especially typhoid, it is best, as a rule, to wait for the line of demarcation, but the operation should not be deferred long after its appearance. If danger of septic infection or speedy exhaustion should appear, immediate amputation at or above the probable limitation of the disease should be done. The extension of the disease, if the femoral be free, will not be, in the majority of cases, above the tubercle of the tibia. If the femoral be involved, necessitating an amputation of the thigh, the resources and the safety of modern antiseptic surgery would lead us in general to amputate, but in some cases it may be a serious question whether expectant treatment and a relatively long-subsequent amputation might not be less dangerous than an earlier operation. —W. W. KEEN, in *Boston Medical and Surgical Journal.*

Some persons will tell you, with an air of the miraculous, that they recovered, although they were given over, whereas they might, with more reason, have said, they recovered because they were given over.—*Colton.*

CURRENT LITERATURE CONDENSED.

Variations in the Weight of Children During the First Two Weeks of Life.

As a result of the study of the weight during the first two weeks of life of 592 healthy children born at term, Schaeffer (*Archiv. für Gynäkologie*, B. lii., H. 2, p. 282), found that by the seventh day only 14½ per cent. had reached or exceeded the weight at birth and continued to increase thereafter until the fourteenth day. Forty-one per cent. did not reach or exceed the original weight before the fourteenth day. Forty-four and a half per cent. weighed on the fourteenth day less than at birth, and of these only 6 per cent. had at any time exceeded this weight. The minimum weight was observed on the third day. The weight at birth was usually regained on the ninth or tenth day. The maximum was attained between the tenth and twelfth days. The smaller the tendency to increase in weight the more irregular were the periods of maximum and minimum weight. Male children manifested greater variations in maximum and minimum weight than female children. Children considerably above the average weight at birth, especially girls, displayed a marked tendency to decrease. Primiparæ weighing less than 121 pounds and under twenty years of age gave birth on the average to the lightest children with the least predisposition to increase; as did also invalid mothers, as well as those engaged in hard work and badly nourished during pregnancy. The reverse applies to primiparæ and multiparæ weighing more than 121 pounds and between twenty and twenty-nine years of age. The latter also gave birth to a larger number of male children. A favorable course in the puerperium was without influence upon the weight of the child. Robustness of the father compensated for weakness on the part of the mother. Race, nationality and family exerted an influence. The actual loss of weight until the third day was greater, and the increase in weight until the seventh day smaller than the difference between the ingesta and the excreta. From the beginning there was some consumption of the infantile body for the provision of the necessary degree of heat, for which the milk alone taken as food was insufficient. For this reason the curves for weight, temperature and nitrogenous elimination were parallel. In the first three days the uric acid curve indicated the consumption of the infant's tissues that was taking place. Subsequently, together with the increased use of milk, the liver and thymus gland, from the destruction of leukocytes and the metabolic activity of the urate curve, became more prominent. Premature children displayed greater loss of weight, greater reduction of temperature, greater elimination of nitrogen in the urine, and more frequent icterus. The children of twenty-one tuberculous mothers had at birth an average weight of 5¾ pounds. The reduction below this was still considerable as late as the fourteenth day, as it was also in healthy children of syphilitic mothers. Icterus neonatorum is attributable to the consumption of the infantile body necessary for the production of heat, as a result of which there is increased formation of bile in the liver, at times in conjunction with deficiency of water and the consequent destruction of red-blood corpuscles. Bile enters the circulation because of the general deficiency of water and the low pressure in the biliary system, because the slight ingestion of nourishment fails to stimulate contraction of the biliary passages, and because the pressure in the portal vein is less than that in the biliary channels. Thus, icterus is especially common among weakly, sickly and premature children—at times of primaparæ—with little increase in weight; and, on the other hand, among those with persistent meconial stools. When jaundice exists, there is generally slight and slower increase in weight. Children fed with sterilized milk show no increase in weight on the seventh day, and on the fourteenth day a slighter increase than other children. The loss of weight on the fourteenth day was less among especially well-developed children than among normal children of average weight, and the increase larger. In such children icterus can only occur in association with loss in weight.

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PHILADELPHIA, SATURDAY, NOVEMBER 14, 1896.

EDITORIAL.

THE SURGICAL STATUS OF THE BICYCLE.

For twenty-five weeks during the wheeling season, the *Buffalo Express* has collected statistics of accidents occurring to bicycle riders in the streets of that city. Before quoting figures, some preliminary remarks may be in order, to call attention to their general significance.

Cold-blooded as it may seem, it is necessary for the surgeon, like the physician of any branch of practice, or like the man engaged in business of whatever kind, to inform himself as to the sources of his employment. It is not simply with regard to the fullness of his pocket-book that the obstetrician notes the average number of births to each marriage, or that the surgeon is interested in the influence of steam railroads or of trolleys on his practice. As a matter of practical philanthropy, it is desirable that every one should anticipate, so far as possible, the demands which are likely to be made upon him, while sociologic questions are solved only as each worker notes the influence which the various institutions of civilized life have upon the welfare and detriment of the human race, so far as his own possibilities of observation extend.

The statistics gathered by the *Buffalo Express* ought to be fairly representa-

tive. The city is one of the second magnitude, having—exclusive of suburbs—about 350,000 inhabitants. One in seven of these, or about one in four, who may be expected to use the highways, ride bicycles, to some extent. Although supplied with over two hundred miles of smooth pavement, the majority of the riding, both by men and women, is for business and therefore on down-town streets. These are not so wide nor so empty as might be desired by cyclists, still there is no such crowding as occurs in New York and Boston, none of the tortuous and narrow streets of the latter and none of the bad pavements which still linger in Philadelphia. On the whole, the conditions are as favorable as can well be expected without being ideal.

The *Express* has chronicled, between April 15 and October 10, sixty-three bicycle accidents serious enough to involve medical attendance. The editorial writer also, states that he personally knows of a number of cases that did not get into print and estimates the total number of accidents as about one hundred, or four per week. No deaths have resulted, although many of the injuries were, at first, thought to be fatal. The distribution of these accidents, so far as time is concerned, is about equal for May, June, August and the parts of April and October covered by the statistics. Five accidents occurred in July and sixteen in September. The increase for September is correctly ascribed to the greater amount of traffic. The minimum for July was probably due in part to the diminution of business, the absence of wheelmen from town and the relatively greater use of up-town and suburban streets. The *Express* explains an increase of accidents in May and June as probably due to the large number of novices riding, but the figures given do not show any such increase. Forty-one, about two-thirds of the cyclists injured, were men, indicating a relatively greater liability on the part of women. This is explained, not only by differences in dress and general physical development, which work to the detriment of the female sex, but by the common observation that women cyclists carry more bundles than men, and, therefore, have their wheels under less perfect control, and that they also take chances that none but the most reckless male riders would dare.

These statistics show in the most convincing manner that the popular notion as to the prevalent carelessness of cyclists, is totally wrong. Only six serious accidents to pedestrians can be charged against 50,000 wheels in half a year, and it is more than possible that some of these six may have been partly, or wholly, due to carelessness of the injured persons. Moreover, of the sixty-three injured bicyclers, only five had suffered from collision with other cyclists, representing, probably, not more than three serious accidents, since apparently the figures refer to the number of injured persons and not to the number of collisions. In other words, these 50,000 cyclists, riding for half a year—and the half during which wheels are most used—threading their way in and out through crowded streets, sometimes in such swarms that one might count a hundred or two in walking a block, are responsible for only about ten collisions with serious results. Four riders collided with trolley cars and one or two each with telegraph and telephone poles, trolley posts, curbstones, lamp and sign posts, etc.

In contrast with these meagre figures, we learn that twenty-five of the injured bicyclers had collided with vehicles drawn by horses. The figures lend color to the general opinion of wheelmen that many drivers of delivery wagons, mov-

ing vans and hacks, not only do not do their share in trying to avoid collisions, but take a malicious pleasure in cramping suddenly on the wheelmen or otherwise blocking him and letting him avoid disaster—if he can. Many of those who are not malicious are criminally careless.

It should also be noted that, in all probability, many of the cases in which bicyclers have run into poles and curbs are directly due to crowding by vehicles. In one such case—whether included in the list or not, we do not know—a wheelman was deliberately crowded to the curb by a hack driver and fell, sustaining a compound fracture of the leg.

We are not aware that there is any characteristic injury resulting from bicycle accidents. The rider is supported by feet, perineum and hands, so that no one part of the body suffers the entire force of impact. The direction of the collision, the rate of speed, the objects against which the wheelman falls, or against which he may be driven, his attitude on the wheel, all influence the lesion which he may suffer. It must be borne in mind, also, that a cyclist does not suffer one fall, unless he is precipitated over an embankment or has some similar accident, but is pushed sideways by his momentum, after he strikes the ground, without being able to free himself from his wheel or to stand upright. Thus, he may sustain injuries to his knees, hands, shoulders or head, according to his efforts to save himself and according to the direction in which he stumbles. Those who do not ride bicycles, almost without exception, overlook the fact that the cyclist not only suffers the force of collision but also the results of this pushing, stumbling fall.

The pedestrian often imagines that it is sport for the wheelman to run him down and the comic papers have a large file of jokes to this general effect. The pedestrian, already on the ground, is struck by an air cushion, or is whirled out of the way by the fork or handle bar. The wheelman, on the other hand, bears the brunt of the collision on the perineum, and also receives a bad fall.

Much has been written on the dangers of wheeling, medical and traumatic, but we believe that actual statistics, as to the result of street accidents, are rare.

ABSTRACTS.

SOME ADDITIONS TO OUR VEGETABLE DIETARY*

Up to the present time chemistry has shown in a general way what substances are required for building and repairing the body, for keeping it warm, and for making it work. It has shown too approximately, what amount of lean meat, flour, sugar, etc., ought to produce the desired result, but it has not yet shown in detail what kinds of these various types of food will suit the taste, digestion, and physiological needs of particular persons or particular conditions. An exclusive diet of salt meat and beans in the arctic region produces the physiological condition known as scurvy. In some parts of the country a diet of corn bread, bacon, and molasses has been persisted in to such an extent as to produce a widespread and almost chronic condition of biliousness. The conclusion from such cases is that in the selec-

*Frederick V. Coville, Botanist, U. S. Department of Agriculture, in the Year Book of the Department of Agriculture, February, 1896.

tion of food we must take into account the appetite, power of digestion, and physiological peculiarities of the individual; in these matters each man is necessarily his own judge. There seems little doubt, in general, that a wider use of green vegetables in the dietaries of most of our people, particularly those with healthy digestion, would be a marked benefit.

In the year's diet of wild herbivorous animals, the fats and the carbohydrates, principally stored in seeds in the form of oil and starch, furnish the chief foods in autumn, and on them the animals fatten, providing themselves with the necessary store of bodily fuel for the winter. In the spring, when they have usually exhausted this stored fat, their principal food is green herbage, and upon this they renew their muscular vigor and general vitality. A similar yearly routine prevails among savage races, as illustrated by many tribes of our Western Indians. So far as the naturalness of a diet of green vegetables is concerned, there can be no doubt that it formerly was and that it still is adapted to the requirements of the human body. But since the beginning of civilization the food of mankind has come to be more and more artificial in character, until foods are now selected more by custom than by instinct. The habit of eating salads and boiled green vegetables, commonly referred to as pot herbs or greens, is much more prevalent in Europe than in America, and to the lack of this kind of food, it is believed, is due in large part the reputation of Americans as a bilious race. Of course, like all nations, we eat a large amount of plant food, but by far the greater part of it is derived from seeds, roots, and tubers.

All pot herbs are properly gathered in the early period of the plant's growth, when the green parts are relatively rich in formative and nutritious materials. More than four-fifths, by weight, of the substance of green vegetables is made up of water. Care should always be taken in gathering or selecting pot herbs that the plants are young and have not become tough and stringy by the transformation of their formative materials into cellulose or other indigestible or perhaps deleterious substances.

The Swiss chard (*beta vulgaris*) has been cultivated and selected in such a way that the principal development of the plant takes place in the leaves instead of the root. The plant is sometimes called, therefore, leaf beet and sometimes spinach beet.

The charlock (*brassica sinapistrum*) occurs as a weed across the northern part of the United States, from New England to the State of Washington, and is most troublesome in regions like Wisconsin, Minnesota, and North Dakota, where spring wheat is extensively cultivated. It is a near relative of the black mustard, commonly occurring with it as a field weed, but may be distinguished by its large pods, which when mature are 1 to 2 inches in length, those of black mustard scarcely exceeding half an inch. Charlock was commonly used as food in northern Europe centuries ago, but in America it has not, so far as known, been employed for that purpose. Indeed, in some parts of central New York, where it is distinguished from its relative under the name "wild mustard," it is commonly reputed to be poisonous.

Chiccory (*Cichorium intybus*), the ground and roasted root of which is used in small amounts to improve the flavor of coffee and in larger amounts as an adulterant or substitute for it, occurs as a weed in the Atlantic States and on the Pacific Coast, and locally in the interior. Thus far it is confined principally to the vicinity of cities and towns, and has not yet become generally diffused. It is closely related to the cultivated endive (*Cichorium endivia*), a common salad plant. The root leaves in their young state are the parts used as a pot herb. They contain a bitter principle.

The winter cress (*Barbarea præcox*), and the yellow rocket (*Barbarea barbarea*) often pass under the general name of mustard, but the two species may be easily distinguished from the true mustards by the form of their leaves, as well as by the technical difference shown in the cross section of the seed. Yellow rocket is a well-established weed in the Eastern States, having been introduced from Europe. It occurs also as a native plant upon the higher mountains from the Atlantic to the Pacific. Winter cress is in common

cultivation from the vicinity of New York City southward, and to some extent reseeds, and maintains itself without assistance, but it can hardly be considered under these conditions a real weed. In the city of Washington it is marketed extensively as a winter salad and pot herb.

The occurrence of the dandelion (*Taraxacum taraxacum*), as a weed in lawns and pastures is due, as with most of our common weeds, to its introduction from Europe. While it occurs in almost all parts of the United States, it is not a common plant in and west of the Great Plains, nor in the extreme south, though it has obtained a strong foothold at a few points on the Pacific Coast. Market gardeners in the vicinity of Paris have been cultivating the dandelion for the past twenty-five years, and at least three horticultural varieties have been developed within that time. In the United States, however, the dandelion is seldom cultivated, though eaten almost everywhere. The customary use of the dandelion in Paris is as a salad, the plants being eaten either green or blanched.

Two species of dock, the broad-leaved (*Rumex obtusifolius*) and the curled (*R. crispus*), are common weeds in pastures, meadows and cultivated fields, the former extending from New England to the Great Plains, the latter quite across the country. Both are perennials whose root leaves in spring are often used as a pot herb, sometimes alone, sometimes mixed with dandelions or other plants. Patience dock (*R. patientia*) is widely cultivated in Europe as a pot herb, and is grown in America also to some extent for the same purpose, but it seldom appears in our markets. The true sorrel dock is in common cultivation in Europe, being grown either from seed or by root propagation. This is the most acid of the plants used as pot herbs, nearly all the docks containing, in greater or less amount, an acid principle similar to that of the common pie plant or rhubarb. The young leaves of one of our native docks *R. berlandieri*, were used as a pot herb by the American aborigines, more particularly the Pimas and Maricopas.

Kale (*Brassica oleracea acephala*), essentially a cabbage plant that does not form a head, is a common market pot herb. Like cabbage, it requires thorough cooking, and is less easily digestible than many other pot herbs. The young leaves of the turnip (*Brassica rapa*), either green or blanched, are frequently used as a pot herb, particularly in the South. They closely resemble some of the varieties of kale in both appearance and taste.

Lamb's-quarters (*Chenopodium Album*), is a common weed in cultivated fields and gardens, extending almost throughout the United States. In its young stage, when six or eight inches high, the plant is very tender and succulent, and in Europe, as well as in some parts of our own country, has often been employed as a pot herb. It belongs to the same family as the beet, spinach, orach, and mercury. This is perhaps the most widely diffused and commonest of the weeds which might be used for human food.

Marsh marigold (*Caltha Palustris*), which in the United States bears more commonly the name "cowslip," is a native of the northern United States and British America, extending from New England to Minnesota and northwestward to Alaska. It grows in cold swamps and wet meadows, shooting up in the spring through the shallow water. Locally it is used among the country people as a pot herb, the plants being gathered when they are in bud or just as the flowers begin to open.

Mercury (*Chenopodium bonushenricus*), more commonly pronounced "markery," is one of the common cultivated pot herbs of Europe, and to some extent has been introduced into our gardens. It shows little tendency to spread as a weed, and is not likely to become generally abundant in the United States.

Black mustard (*Brassica nigra*), from which the condiment known as mustard is chiefly derived, has long been cultivated in Europe for its young leaves. In our own country it was introduced many years ago as a weed in fields, and in some regions, more particularly in California, where it passes under the general name of "wild mustard," it has become a thorough pest in wheat fields. So easily does it seed itself that it is rarely, if ever, really cultivated in the

United States, although small areas in the corners of gardens are often left without cultivation as a "mustard patch." Its value as a honey-producing plant has added further to its desirability on farms.

Orach (*Atriplex hortense*), is an occasional garden substitute for spinach, though it rarely appears in market. Several varieties are grown in Europe, which differ principally in color, the stem and leaves varying from the ordinary bright green to a pale yellowish green with white stems or to a dark reddish purple. The plant is a native of Tartary and shows no tendency to become established as a weed.

None of the common pigweeds (*Amarantus*) introduced from tropical America and common in our cultivated fields, such as *A. retroflexus and A. chlorostachys*, appear to have come into use as pot herbs, although a variety of *A. gangeticus* is commonly cultivated by the Chinese in California for this purpose. Among our Southwestern Indians, both in Arizona and in northern Mexico, as well as among the Mexicans themselves, a native species, *A. palmeri*, is used largely in a similar manner.

Pokeweed (*Phytolacca decandra*), is a native plant of the United States, growing throughout almost all parts, except the extreme north, as far westward as the Great Plains. The root contains a deadly poison, which is used medicinally, and in some cases has caused accidental death. In early spring the stout stems push out from the ground and are cut when only two or four inches in height. They are thick and succulent like the stems of asparagus.

Purslane (*Portulaca oleracea*), occurs as a weed in almost every garden in the United States, is a native of India, has been cultivated from the earliest times, and was such an early accompaniment of civilization as to have a Sanskrit name. It was carried westward to Europe, and has there been in use for centuries as a salad and pot herb. Indeed, several varieties are now known in cultivation.

In mountain regions from the Rocky Mountains westward to the Pacific occur several varieties of Claytonia more or less resembling the two well-known species of the eastern United States called "spring beauty." The most widely diffused and representative among the western species is *C. perfoliata*. For many years this has been in use as a pot herb, though a knowledge of its employment for this purpose appears to be confined to restricted localities.

The common garden spinach (*Spinacia oleracea*), cultivated everywhere in Europe and the United States may be considered the typical pot herb of these two countries. The plant, which was unknown to the Greeks and Romans, is believed to have originated in Persia and to have been carried both westward and eastward, ultimately finding its way to China as well as western Europe and America.

New Zealand spinach (*Tetragonia Expansa*), was brought to Europe by Captain Cook in his voyage around the world, and has since been cultivated there to a greater or less extent. It is an annual, with spreading branching stems and inconspicuous green flowers. It continues to produce a crop of succulent leaves during the whole summer, and therefore is useful as a pot herb in the hot season, when almost all other plants so employed are not available. It will also withstand a considerable drought, and for this reason is especially useful in regions of limited rainfall.

The plants enumerated here do not by any means comprise all the species that might be used as pot herbs, but they have been selected so as to suggest to people in every part of our country certain plants growing in their own region which are available for use in this manner. Doubtless others, particularly among our native plants, such as the common nettle, milk-weed, and the round-leaved mallow, commonly known to children as "cheeses," will be found equally important.

He—"What do you think of young Jones?" She—"I think if he had lived in biblical days, Balaam's ass would never have obtained such prominence."—*Harlem Life.*

Policeman—"You had better come along quietly and not make any trouble." Pickpocket—"G'yarn. Not give you trouble. Where'd your job be if it weren't for the likes o' us?"—*Judy.*

THE IMPORTANCE OF MAKING EXAMINATIONS OF THE SIGMOID FLEXURE OF THE COLON.*

The sigmoid flexure, as you know, is the double curve the descending colon takes before it terminates in the rectum. Treves claims "that it is not usually like the capital S shaped, but a large loop about 17½ inches long, with the top of the loop sometimes even touching the right side of the pelvis." In two cases in which I opened the abdomen and found the disease in the sigmoid, in one, the loop, as Treves calls it, extended over to the right side, and in the other it was lying in the median line. The upper part of the sigmoid is retained in its place by a loose fold of peritoneum, which accounts for its free movement and the different shapes it assumes. But at the lower end of the flexure the fold of the peritoneum is quite short, and holds the part up close to the sacro-iliac symphysis. The sigmoid hangs down in the pelvis like a sac when not distended. The rectum is narrower where the sigmoid flexure joins it than further down, even narrower than the lower part of the sigmoid flexure.

From a mechanical standpoint the danger of feces accumulating in the double curve or loop is plain to be seen, with the opening in the rectum smaller than the sigmoid. But we do not mean to reflect on the mechanical construction of the sigmoid, for it has a wise and important function to perform, that of being a receptacle for the final disposal of the feces between the acts of defecation, as well as by its peculiar shape, to prevent the too rapid passage of the feces and gas from the bowels. The function of the rectum being to carry off the feces and not retain them, as is generally supposed, when the daily evacuation from the bowels is not observed. O'Beine claims that the main portion of the mass is lifted back into the sigmoid flexure, when the desire to go to stool is not attended to, thereby leaving the rectum comparatively free from feces. While this may be true, I know that I have often found, while making vaginal examinations, that the rectum was filled with a large fecal mass, but how long this mass had been in the rectum I could not say, or whether it was lifted back into the sigmoid flexure before its final expulsion, I do not know.

In the male I have rarely found feces in the rectum to any considerable amount. When the feces are lifted back into the sigmoid and retained there, the watery portion is soon absorbed and the accumulated mass acts as an irritant, thereby causing congestion, inflammation and ulceration of the mucous membrane, and as the hardened mass is finally forced out through the rectum it causes hemorrhoids and many other pathologic conditions of the rectum. But as I wish to confine my paper to the sigmoid flexure, will leave the disease of the rectum out.

There is no doubt that the sigmoid flexure is the most common seat of obstruction in the bowels, and it is well for us to keep in mind the loop shape that the sigmoid is likely to take when we feel a hard mass in the median line, or even on the right side.

CASE I.—Four years ago I made an exploratory incision in the abdomen for what seemed to be a large fibroid tumor. In fact, it was so diagnosed by several of my medical friends. But when we got the abdomen open, to our surprise it was the sigmoid flexure lying in the median line and enormously distended with feces. The gut was hypertrophied, that is, its walls were quite thick, seemingly one-quarter inch, with a channel around the mass to allow the feces to pass. We made a four-inch incision in the bowel and scooped out fifteen to twenty pounds of hard feces, as well and thoroughly packed as the clay in the ground. This opening in the bowel was closed with 16 Czerny-Lembert silk sutures and dropped back into place. She made a good recovery, and in eight months gave birth to a healthy child. This case gives the history before the operation of having had this supposed fibroid for eight years, and that before she noticed it, she had suffered from constipation, but during the later years her bowels had been loose.

CASE II was that of a married lady,

*A. B. Walker, M.D., Canton, in Cleveland *Journal Medicine.*

thirty-eight years of age, who had pain in her left side, endometritis and internal hemorrhoids, with a mucopurulent discharge from bowels. She had a cachectic look, as though there was absorption of some septic material, which was attributed to the condition of her uterus. Dilating, curetting and packing her uterus cured her endometritis, dilating her sphincter *ani*, and removal of her hemorrhoids cured her rectum, but the pain in her side and discharge from her bowels continued, and the cachectic appearance was no better.

Case III was that of a single lady, aged twenty-four years, who had pain in her side and back, dysmenorrhea, a small fissure in her anus, with a mucopurulent discharge from her bowels. Dilating her uterus helped her dysmenorrhea, and dilating her sphincter and curetting the fissure cured her rectum, but the pain in her side and back and mucopurulent discharge were no better.

Case IV.—A married lady, forty-eight years of age, had pain in left side and back, a rectal ulcer, several enlarged *papillae*, and also a mucopurulent discharge streaked with blood from her bowels. A thorough dilation of her *sphincter ani* muscle, and curetting the ulcer, clipping off of the *papillae* cured her rectal trouble, but she still had the discharge from the bowels. About two weeks after the operation she remarked to me that she believed her disease was higher up, and that I had not reached it. I tried to pass a Kelly's long rectal speculum without an anesthetic, but failed. I succeeded in passing a Wales Bougie No. 5, and thoroughly washed out her sigmoid flexure with hot water, after which I threw up into her sigmoid, through this same bougie, four ounces of a saturated solution of boric acid, which she retained six hours. This treatment was repeated every other day for a period of one month, when she was discharged cured. The pain in her back and left side were entirely relieved and the discharge from her bowels stopped. My experience in Case IV. enabled me to see where I had failed to cure Cases II. and III. No. 2 was placed on the same treatment, and is getting well. No. 3 is not well yet, but is improving. I may have to anesthetize her and explore the sigmoid flexure with a long speculum, when I expect to find an advanced stage of inflammation of her sigmoid, and perhaps some ulcerations.

Case V.—A married lady, aged twenty-eight, mother of one child, consulted me last winter for what she called indigestion, pain and tenderness over the left side, and distention of bowels from gas. She had a mucopurulent discharge, mixed with blood from bowels, with at times round casts an inch or more long, not unlike the false membrane of croupous laryngitis. My diagnosis was inflammation of the sigmoid flexure, bordering on ulceration, with some narrowing of the bowel near the entrance to the rectum. I recommended an exploration with Kelly's speculum, and later the use of a Wales bougie, as in Case IV. My advice was not taken, and later on a specialist was imported, who, in my presence, dilated and scissored her rectum; dilated, curetted and packed her uterus; dilated and removed a circular ring from her urethra; dehooded her clitoris and removed both her ovaries, all at one time in the order I have mentioned. I was not able to see anything specially wrong with her ovaries, but as we look through differently colored glasses, perhaps I was not the best judge. She recovered from the effects of the multiple operations, but was not benefited by them. In fact, her condition was made worse by the mutilations, which only added to her sufferings. A few weeks later, there being some induration in her pelvis, her specialist decided to remove her uterus, which he did through the vagina. After he was through he remarked to me that this ought to benefit the patient, when I told him that I had no confidence in it, for the trouble was in her sigmoid. He then passed a good-sized probe up into her sigmoid with considerable difficulty. She recovered from this second operation, and since having her sigmoid opened up, she has been somewhat better, but is not well, for on the eighth of this month I saw her in a very severe attack of indigestion, with the same trouble in her left side. I doubt whether she will ever get well until her sigmoid is opened up, cleansed and treated.

Case VI., that of a married lady, aged twenty-seven years, mother of two

children, a very intelligent lady, consulted me three months ago for what she called dysentery. Upon closer inquiry I learned that frequently through the day she would pass large quantities of mucus mixed with blood and pus. She had some tenderness over the sigmoid and pain in her back; was growing thinner in flesh and had a bad color. Trouble of her left ovary had been diagnosed by another physician, and her uterus had frequently been treated locally for the pain in her back. I was not able to find anything wrong with her uterus or ovaries, and her rectum looked fairly well, but when I passed a Wales bougie, as the point of it entered her sigmoid, it gave her a sharp pain in the back. My diagnosis was, advanced stage of inflammation of her sigmoid, bordering on ulceration. She gave the history of having been of decidedly constipated habit. My treatment consisted in *cascara sagrada*, to regulate her bowels; hot water enemas, to wash out her sigmoid, and fluid hydrastis, drams two, water oz. two, mixed, which I threw up into her sigmoid with a Wales bougie No. 5, every other day, after the enema passed off. This she retained from six to eight hours. She rapidly improved, and is to-day comparatively well. She has no pain in her back and does not pass any more mucus, blood or pus.

I have purposely avoided malignant diseases, torsion, etc., of the sigmoid, because they are not usually hard to diagnose, and have given you the ones that are likely to be overlooked and treated for some other disease, which is more likely to be the case in the female, for when they have pain and distress in the pelvic region it is usually referred to the uterus or ovaries; and there is no doubt that many an ovary and uterus has been sacrificed when the pathologic condition was all in the sigmoid flexure.

SUDDEN ACUTE ABDOMINAL PAIN: ITS SIGNIFICANCE.*

The accumulative experience of fifty years has still left obscure points in abdominal surgery which the genius of Lawson Tait attempted to set at rest by the exploratory and confirmatory incision.

During the past ten years I have been particularly interested in gynecology and abdominal surgery, and all along these years has risen the question of abdominal pain and its signification. To interpret abdominal pain requires the best skill of the finest heads.

Location.—How far can we diagnose abdominal pain by its locality? Only to a limited degree. Associated circumstances must aid in the diagnosis. There are three common localities of acute abdominal pain, or peritonitis,—viz., pelvic, ceco-appendicular and that of the gall-bladder region, and as probability is the rule of life, it is well to diagnose acute abdominal pain as a disturbance in one of these three localities of the peritoneum.

Acute abdominal pain in general is referred to the navel,—in other words, to the region immediately over the solar plexus or abdominal brain. Acute abdominal pain is due to a disturbance of the peritoneum, owing to a lesion of an adjacent viscus; but since the peritoneal pain can arise from many organs and from several points of the same organ, it demands the most experienced diagnostic acumen and the most mature judgment to interpret the significance of the trouble. I have repeatedly observed in appendicitis that patients say the acute pain, especially in the beginning, is over the whole middle of the abdomen (solar plexus). This may be due to excessive and violent peristalsis of the small intestines. As regards locating the pain at any point of the small intestines, it cannot be done; first, because the loops of intestine have no distinct order as to locality; second, the patient cannot discriminate a point of pain at any given point,—perhaps from lack of practical experience. With few exceptions, to locate the seat of trouble in acute ab-

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dominal pain, we call to our aid the pain elicited by pressure. Pressing the abdominal walls produces a distinct localized tenderness or pain which suggests localized pathology. Again, rigidity or tension of the abdominal wall is suggestive of a pathological locality. This symptom is purely reflex, due to irritation passing from the involved viscera to the spinal cord, whence its irritation is transmitted to the periphery of the lower intercostal nerves which control the abdominal muscles over the seat of pain. Dashing cold water on the belly will produce similar protective muscular rigidity. Hence, in general, the location of disease in the abdomen from the patient's feeling of sudden acute pain is quite indefinite. But local tenderness and local pain on pressure aid very much. Localized rigidity of the abdominal wall is suggestive that such tension is protecting the seat of disease from motion, further bacterial or fecal invasion. In short, the rigid muscles are putting the pathological parts to rest.

Vomiting is a general characteristic of sudden acute abdominal pain. In sudden acute abdominal pain, from visceral lesions, nature makes profound effort to manifest its distress, but to diagnose the seat of pathology and nature from the localization of the pain requires much reading between the lines from experience and judgment.

Again, a vast difference arises between sudden acute abdominal pain and the pain which comes on slowly. Much depends on the stage of the disease in which the physician first visits the patient.

The signification of sudden acute abdominal pain may be realized better by a short consideration of some of the principal conditions which occasion it.

The first class of sudden acute abdominal pain chiefly arises from the digestive tract. The second class arises from the genito-urinary.

(1) In the category of the digestive tract, producing sudden acute abdominal pain, we place *interstitial obstruction* from (*a*) strangulation by bands and through apertures; (*b*) invagination; (*c*) volvulus, and (*d*) perforation. The mode of onset in all these is sudden and violent and nearly always accompanied by vomiting.

Strangulation by bands and through apertures constitutes one-third of all interstitial obstructions. If the bowel loops slip through the inguinal or femoral aperture, digital examination will detect the cause of the sudden, acute abdominal pain. Obturator and sacrosciatic hernia are seldom diagnosed, so that practically they would come under internal strangulation by peritoneal bands. Sex does not aid in diagnosis, for males and females about even up in peritonitis during life, and hence will possess about the same amount of peritonitic bands to strangulate bowel loops.

A history of previous peritonitis tells the story of strangulation by bands. Vomiting is violent, pain from peristalsis is periodic and general over the abdomen. The pain is not due to stoppage of the fecal current, but to reflex irritation of the bowel at the seat of obstruction. Temperature is not conspicuous and the pulse is not much changed. Tympanitis arises in exact proportion to the peristalsis of the bowel wall above the seat of obstruction. At first the pain is violent, it subsides with the progress of the case, becoming more continuous and generally diffused. If the patient be quiet, the pain is so slight that it deceives the most elect. No stool, no gas per rectum, no detectable swelling at any hernial aperture with continuous abdominal pain and vomiting demand surgical notice. The temperature and pulse are not reliable. Strangulation by bands will generally give no tender location on pressure and no detectable swelling, and, in fact, I have watched cases with the abdomen quite soft and pliable with no possible physical point of diagnostic value, not even tympanitis. In one case the pain was at first severe, general, and almost subsided the day before the operation, yet fifteen feet of gut was as red as a sunset. The sudden, acute abdominal pain is not due to the constricting band, but to reflex irritation transmitted to the abdominal brain where reorganization occurs, whence it is emitted to the whole digestive tract, inducing violent, disordered, and wild peristalsis (colic).

Acute, sudden, abdominal pain, due to a constricting peritoneal band is one of the most obscure matters to inter-

pret. To explore the abdomen in the proper time for such cause requires a wise diagnostician and a bold surgeon. The matters to bear in mind in strangulation by bands are the acute, sudden abdominal pain with a violent onset, vomiting, and the distinct colicky, peristaltic, periodic character of the suffering, not forgetting a previous history of peritonitis. However, the sudden, acute abdominal pain arising from strangulation of a loop of bowel by peritonitic bands is difficult to interpret and seldom diagnosed. It may be asserted that when a patient is suffering from some grave disease, manifest only by sudden acute abdominal pain, the nature of which cannot be interpreted, an early explanatory laparotomy is justifiable and demanded. Such obscure cases require an experienced and skilled surgeon in abdominal work to meet any emergency. I remember very distinctly the case of a man about forty who gave consent to my colleague, a general practitioner, who was entirely untrained by experience or observation in abdominal surgery. The doctor told me he opened the abdomen and found a band stretching tightly across the ascending colon. But he said "the colon was black, and I did not know what to do with it, so I closed the abdomen." It is needless to say that the man made a prompt, fatal exit. But most cases die undiagnosed. The danger of strangulation by bands is gangrene and perforation.

Invagination constitutes about one-third of all interstitial obstructions, and the sudden acute abdominal pain arising from this cause is more easily interpreted. Age signifies much in this case, for one-fourth of all invagination occurs before the end of the first year of life, and one-half before the end of ten years. Invagination is a disease of childhood. Its mode of onset is sudden and often violent. From some twenty-five experiments in invaginating the bowel of the dog, I am sure the pain is periodic at first. The griping, colicky, peristalsis is rhythmic, depending on irritation. At stated times the dog suddenly spreads wide his four feet and arches his back, appearing in severe distress, then gradually recovers his natural attitude. In invagination blood occurs in the stool in 80 per cent. of cases (especially children), and the vomiting is not violent nor even always conspicuous, for the bowel is only partially occluded. Seventy per cent. of invaginations occur at the ileo-cecal apparatus,—that landmark in man's clinical history,—15 per cent. in the small intestines, and 15 per cent. in the large bowel. Invagination manifests abdominal pain similar to a long enterolith in the bowel which in turning leaves small spaces at its side for the passage of gas and some liquid stool. I have, unfortunately, watched a case of enterolith day after day, not being able to interpret the abdominal pain or to diagnose the case until gangrene of the bowel occurred at the seat of the enterolith, when nature asserted sufficient manifestation to explore the abdomen, but with a fatal result. The most skilled of abdominal surgeons repeatedly examined this case, but could not interpret the acute abdominal pain which came on suddenly, though as the days glided on it quietly subsided. The patient was a physician, but could not localize any abdominal pain; it was diffuse. Temperature was about 99½° and 100°F., and the pulse was 85 to 95 almost the whole week of illness. The abdomen was generally soft and not tympanitic. Very seldom can an abdominal tumor be felt in the bowel invagination. Shock in young children is quite conspicuous, yet I personally know of two autopsies in infants who were attended in life by three of the most skilled Chicago abdominal surgeons, yet in neither case was the diagnosis of invagination made, which the post-mortems revealed as the cause of death. A skilled and experienced physician, such as was the late Dr. Jaggard, took an eight months' infant and stripped off the clothing to be more thorough in examination, and yet, after all his diagnostic skill, failed to locate disease in the bowels. The child was very pale, cried a little, and died thirty hours after the attack. The autopsy revealed ileo-cecal invagination.

Sudden, acute abdominal pain in a child may with high probability be interpreted as invagination, especially if one can detect the periodic, peristaltic character, its colicky nature. Blood followed in the stool is almost pathognomic. A tumor will rarely be found,

and pressure on it will not generally elicit tenderness. It is not at all likely that the patient can locate the seat of disease from the pain. Tympanitis and vomiting are not conspicuous, and the temperature and pulse are unreliable. The danger of invagination is sloughing of the apex or neck and consequently perforation. Invagination presenting at the anus interprets easily the cause of the pain. Volvulus is so rare that it constitutes about one-fortieth of all interstitial obstructions, and occurs about four times as often in men as women. As in invagination so in volvulus, I was always compelled to suture them in position in a dog. But I never succeeded in establishing a permanent volvulus in the dog. Volvulus is characterized by tympanitis, and it is said by severe periodic pain. Volvulus occurs at the sigmoid in 60 per cent. of the cases; at the ileo-cecal valve in 30 per cent., and in the small intestines in 10 per cent. I have seen partial, but never complete, volvulus in man. Senn operated successfully on a man, on the eighth day, for sigmoid volvulus. The man had enormous tympanitis; his pain is not described as severe, but no doubt the suffering is severe.

At first the pain is periodic, but as time advances it becomes more constant, with now and then exacerbations. Vomiting, though not conspicuous, must arise more or less from trauma to the peritoneum. Perhaps the sudden pain, chronic constipation, and rapid rise of tympanitis would aid in interpreting volvulus, but seldom can one diagnose such a disease, pain, no doubt, would be referred to the abdominal brain. Most clinicians note tympanitis as a conspicuous feature of volvulus.

In perforation it is very difficult to interpret the sudden abdominal pain. Associated circumstances would aid. In typhoid fever one would naturally suspect perforation if sudden acute abdominal pain arose, and my colleague, Dr. Van Hook, successfully operated on a typhoid perforation diagnosed by his medical friend. One might think if he was called to a young woman with sudden acute abdominal pain that it was a round, perforating ulcer of the stomach, after excluding pelvic and appendicular disease. But the sudden acute abdominal pain of perforation is so vague and indefinite that only an explanatory incision would interpret it.

The sudden acute abdominal pain from appendicitis (perforation) is more apt to be diagnosed. Now probability is the rule of life, and when one is called to a boy or a man up to thirty-five with sudden acute abdominal pain, it is likely appendicitis. The pain of appendicitis is, in my experience, a characteristic and conspicuous feature of it. The sudden acute pain in appendicitis is doubtless due to violent appendicular peristalsis (colic) or the rupture allowing the bowel contents to come in contact with the peritoneum, and also inducing violent irregular peristalsis of the adjacent bowel loops. Rigidity of the abdominal muscles over the seat of pathology in appendicitis is a great aid to interpreting the pain. The muscular rigidity is protective and due to the transmission of the visceral irritation to the spinal cord which is reflected to the abdominal muscles. There is a nice balance between the peripheral visceral nerves and the peripheral nerves in the abdominal muscles. Local tenderness and local rigidity of the abdominal muscles is a great aid in signification of the sudden acute pain in appendicitis. It might be well to suggest that the position of the appendix located all the way from the under surface of the liver to the floor of the pelvis, and also many times where there were more or less of a mesenterium commune, the cecum turned towards the vertebral column, and the appendix is then liable to lie among the small intestines,—the dangerous ground of peritonitis. It is likely that the pain in appendicitis depends on the seat of the disease,—*i. e.*, the mucous membrane has become ulcerated, inducing appendicular colic (peristalsis), while the sudden exacerbation of violent diffuse abdominal pain is due to the involving of the peritoneum itself. I see nothing especially worthy of attention in the so-called McBurney point. Pain over the seat of pathology is certainly a natural feature, and generally the appendix lies under a point midway between the umbilicus and the anterior superior spine of the ileum. But it is not always so by any means, for I examined with great and anxious care, a short time ago, a young

physician with severe pain over the so-called McBurney point, when on operation the long appendix was down in the pelvis and perforated. It is a fair proposition to say that tenderness and pain on pressure is approximately over the seat of disease, so to speak of a so-called McBurney point is redundancy. Then, again, pain on pressure may be reflex, bobbing up in remote regions of the abdomen. The sudden, acute, diffuse abdominal pain arising in appendicitis generally subsides to the right iliac fossa after thirty-six hours, and one can nearly always elicit pain on pressure. This pain on pressure is doubtless the motion transmitted to a sensitive, inflamed peritoneum, and not the dragging on an adhesion, as some assert, for adhesions so newly formed can have no nerves formed in them. But man is subject to appendicitis four times as frequently as woman, due, perhaps, to Gerlach's valve being small in man, and thus not allowing the foreign body to escape after entrance, or due to the greater activity of the psoas muscle in man. The appendix lies on the psoas muscle in man more frequently than in woman, and on its longest range of activity, hence when the appendix contains virulent and pathogenic germs the long range of action of the psoas so traumatizes the appendix that it induces the escape or migration of the accidental virulent pathogenic microbes through the appendicular walls into the peritoneal wall or cavity. Common sense and experience would dictate that the pain on pressure would occur in any point of the abdomen possessing inflamed structures. Since probability is the rule of life, it is well to look to the three great regions of dangerous peritonitis,—viz., pelvic, appendicular, and gall-bladder region.

The digestive tract has still another common seat for sudden acute abdominal pain, and that is the gall-bladder region. The sudden acute abdominal pain in hepatic colic is not generally so violent as many others accompanying acute diseases of the digestive tract. Patients relate that the pain is aching, dragging, and in the active stage cutting or tearing. Some relate a feeling of tightness or fulness. But it depends on whether the stone is attempting to enter the mouth of the duct or whether it has already entered. I have had typical cases where operation proved that the stones only attempted to enter the duct.

No doubt these are the cases which say so often that they have some severe pains at any time, but especially after taking hot meals, hot or stimulating drinks, whence arises excessive peristalsis inducing short, temporary hepatic colic. Now, when the gall-bladder has many small stones in it, and when one more or less often attempts to engage in the neck of the gall-bladder, the pain is rhythmical. It begins slowly and arises to a maximum. At the maximum the pain is intense. We have observed such cases and afterwards operated on them, removing many small stones. Gall-stones are perhaps four times as frequent in women as in men; why, we do not know. In my experience patients can generally localize the pain in gall-stones more accurately and definitely than almost any other sudden acute abdominal pain. They refer the pain to its proper locality: however, I must admit that this reference is before rupture. After rupture of bladder or duct the pain is indefinite, like other perforations. The sudden acute abdominal pain in gall-troubles is characterized by more slowness, less acute intensity, distinct periodicity than invagination, appendicitis, or perforation of the digestive tract. Jaundice is not necessary. Jaundice depends on the color of the eyeball, and not the skin. A feature in gall-bladder pain is that it extends well towards the dorsum. Age aids in diagnosing stone in the biliary passages to some extent.

In renal (genito urinary) colic it must be said that the pain resembles that of the hepatic colic in many ways, in rhythm being paroxysmal. It intermits and is often agonizingly spasmodic. It requires much careful study to differentiate the sudden acute abdominal pain in hepatic and renal colic from each other. This is important, for the plan of action is very different. The pain in appendicitis, renal, and hepatic colic are in close relation.

The sudden acute abdominal pain arising from the genitals (genito urinary) is more easily interpreted and managed. The pain can be more definitely

located by the patient and sudden disorganization of viscera, being accessible in the pelvis is much more within control of the gynecologist. The sudden acute abdominal pain from the genitals is generally a ruptured ectopic pregnancy or the very rare matter of the rupture of a pyosalpinx into the peritoneal cavity. Most other pelvic pains are of slower origin and almost always diagnosable. Sex and the reproductive age aid in the interpretation of the case.

Remember the three dangerous peritonitic regions,—viz., pelvic, appendicular, and gall-bladder.

In regard to the character of sudden acute abdominal pain, it varies as to (*a*) its mode of attack, and (*b*) as to the viscera attacked.

If one will closely watch the sudden acute abdominal pain, it will be quite apparent that the character of the pain in most of the acute affections of the abdomen is very similar. We only observe in reality a difference in degree of pain from the bearable to the agonizing, In perforation the character of the pain is the same in all viscera. In invagination it is paroxysmal and periodic, at least at first, due to irregular and violent peristalsis in internal strangulation; it is generally intense and periodic due to violent peristalsis, later continuous and of an aching, dragging character, due to paralysis of bowel segments. In appendicitis the pain is nearly always sudden and intense—*i.e.*, the perforated variety. The variety of appendicitis with slowly increasing pain is likely lymphatic in invasion and not dangerous, simply medical, of course the appendicular mucosa may be perforated. Sudden, acute abdominal pain of a lancinating character, and being quite continuous is very liable to be perforation of the appendix or digestive tube, and the continuous, agonizing character of the pain is a heraldic symptom of diffuse peritonitis, the knell of life. It may be remembered that the character of the sudden acute abdominal pain will depend on the capacity of any viscus for peristalsis—*i.e.*, its capacity to cause colic by violent, wild, irregular muscular action. In peristalsis periodicity must not be lost sight of, and the etiology which gives rise to the irritation, inducing the peristalsis. It may be transitory in character, as food irritation, rapidly forming and reducing invagination or a stone attempting to enter a duct. Or the pain may be continuously periodic, as a stone lodged in some canal, appendix, ureter, small intestine, or biliary ducts.

In regard to the location of sudden acute abdominal pain we have to consider (*a*) the seat of the pain as felt by the patient; (*b*) the pain elicited by pressure (tenderness); (*c*) local rigidity of the abdominal muscles; and (*d*) anesthetic or hyperesthetic condition of the skin of the abdomen.

In general, sudden acute abdominal pain is referred by the patient to the umbilical region, to the solar plexus, directly over the abdominal brain. This, in my opinion, is a nervous center, possessing the power of reorganization, receiving and transmitting forces of controlling visceral circulation and of inducing reflex or referred pain. The irritation of peripheral visceral nerves is transmitted to the abdominal brain, whence reorganization may make the pain felt over the abdominal brain, at the seat of pathology or a remote abdominal point due to a very supersensitive nervous system.

As to local tenderness or pain elicited by pressure, it indicates a pathologic condition of the peritoneum (inflammatory). The pain is induced by motion or disturbance communicated to a sensitive inflamed peritoneum.

Local rigidity of abdominal muscles indicates adjacent underlying pathology of organs supplied by the same nerves as the muscles which exercise a protective agency to preserve rest for damaged tissue to assume repair and prevent further destruction from motion. Hyperesthesia or sensitiveness of the skin, due to transmitted irritation, is often present, but is not very reliable as to locality, for it is dependent on peculiar symptoms, and accompanies, more or less, though irregularly, most acute abdominal affections. Of course, it would be expected that the severe sudden acute pain in the kidney and gall-ducts, being very near to the abdominal brain, would be difficult to separate from the solar plexus. Lead colic may deceive the most elect as to its etiology or seat.

SOCIETY REPORTS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 28, 1896.

The President, DR. J. C. WILSON, in the chair.

DR. JOSEPH PRICE read a paper upon

SURGERY FOR TYPHOID PERFORATIONS.

[See page 577].

DISCUSSION.

DR. GEO. E. SHOEMAKER said that the time has come when the courage which it takes to operate in cases of typhoid perforation is to be rewarded. Granted that the diagnosis has been carefully made, it seems that the surgeon should not hesitate to intervene in this way with the object of saving an almost hopelessly lost life. Too great emphasis, however, cannot be placed upon the importance in this connection of rapid and deft surgery. The man who is unskilled in the best technic adapted to work of this kind should certainly not attempt this character of operation. The parts will not bear handling. No touch upon a peritoneal surface must be made unless it has a definite object to accomplish, and after this is accomplished the parts must not be meddled with. With rapid surgery and the knowledge obtained from dealing with septic peritonitis, which leads us to use gauze drainage in addition to glass drainage, the surgeon will certainly obtain some reward for efforts in this direction.

DR. F. WOODBURY said that Dr. Price is to be congratulated on his results, especially in view of the circumstance that these cases were brought from their own homes to the hospital in the third week of typhoid fever and with perforation and peritonitis, in what is generally regarded as a very serious condition, and one indeed in a state of collapse. Dr. Woodbury noticed years ago in hospital experience a long series of cases in which the patients with typhoid fever, who were removed to the hospital in the second or third week of the disease, were very likely to die. They did badly, and the disturbance and change of surroundings, and the nervous excitement attending the change at the height of the disease, were sufficient to seriously disturb the prognosis. Dr. Woodbury asked if, in a series of cases of the character under consideration, suffering from this grave complication of typhoid, the prognosis would not be somewhat improved by doing the operation at the patient's own home instead of transporting him or her to a hospital? And, in the second place, as to the indication for operation.* May it be assumed in all cases of typhoid fever in which there is an appearance of local peritonitis, that a perforation has occurred and that celiotomy is indicated? A third question is: Can we obtain from the character of the discharges any guiding principle, or any assistance in making up our opinion as to the necessity for this operation?

For instance: in a case in which during the third week of typhoid fever the patient has committed some excess in diet, has eaten some hard substance, or taken some orange-juice and swallowed a seed, and perforation has resulted; knowing this fact, it would seem that the indication for operation would be imperative. Also, when the discharges from the bowel are very fetid and may be assumed to be highly toxic in character, their presence in the peritoneal cavity would be a powerful argument in favor of operating.

On the contrary, if, in the treatment of the disease, the bowel-contents have been kept in as nearly an aseptic condition as possible by the administration of some such agent as B-naphthol, or naphthalin or guaiacol, so that the discharges are kept almost odorless, and when there is otherwise doubt as to the necessity of operation, would this fact throw the balance in favor of delay or not?

DR. W. E. HUGHES said that, as a physician, he was perhaps a little more ready to recommend operation than a surgeon might be, but it is unquestionable (certainly from his experience) that a pronounced perforation in the course of typhoid fever means infallibly death, unless prevented by operative interference. He does not look on perforations in the course of typhoid fever as very largely mechanical, but thinks that there is usually preceding them a certain amount of local peritonitis. That is, the process has been virulent enough to infect a small area of peritoneum about the ulcer. Perforation in the course of typhoid fever, then, can be resolved into possibly two classes: one, in which the process is an exceedingly virulent one, and, after a preliminary very trifling peritonitis there is a large perforation, free escape of contents of the intestines into the abdominal cavity and necessarily widespread peritonitis. Cases of this kind die within a few hours or a day at most after perforation. There has usually been a well-marked history of typhoid fever, and there can be little mistake in diagnosis. In the other class of cases perforation has been more prolonged, or at least there have been primary adhesions preceding perforation, and here there may easily arise a very serious error. From past experience, Dr. Hughes would be inclined to recommend for operation not a case of simple peritonitis,

but a case in which this peritonitis had become pronounced enough to be recognized as ushering in perforation, because then he would fear acute peritonitis, or after perforation had occurred that there would soon be peritonitis. The diagnosis of perforation in typhoid fever is exceedingly difficult in the walking cases in which no clear history of typhoid fever can be obtained, but in which there is unquestionably a local peritoneal condition, which would indicate operation, and whether the case be one of typhoid fever or of appendicitis.

Dr. Hughes related the history of a child some seven years of age, seen in consultation, who presented a history of rather indefinite belly-pain, with some little irregularity of the bowels for ten days or so before the acute onset. The attending physician maintained that there had been no elevation of temperature whatever until three days previously to the visit. Then there was a rapid rise in temperature, with extreme distention of the belly, vomiting, and a great deal of pain. The child became wildly delirious, and appeared extremely ill.

When the child was first seen there was a grave suspicion of typhoid fever, but nothing to base a positive diagnosis upon. There was a little rigidity in the right iliac fossa, and a peculiar doughy feel of peritonitis, and operation was advised. The surgeon consulted refused to operate because the case looked so much like one of typhoid fever and minimized the local symptoms. On the following morning the belly had become soft, the temperature had fallen, and typhoid spots were visible. Two or three days later sudden collapse occurred, with death. Post-mortem examination showed a localized abscess following on perforation and then giving way of adhesions. The case was one of typhoid fever complicated with peritonitis.

In another case, admitted to the Presbyterian Hospital during the second week of unquestioned typhoid fever, suddenly the temperature rose, the pulse fell below normal, and there was a condition of collapse, with pain in the right iliac fossa, distended belly, appreciable rigidity in the region of the appendix, followed by vomiting, which became stercoraceous, and death finally ensuing. Post-mortem examination showed that there had been a localized abscess induced by peritonitis, with rupture of the abscess and general septic peritonitis. Nine days had elapsed between the origin of the abscess and death. It would probably have been easy to have saved that patient's life by means of an operation. Thus in the class of cases in which there is a slow oncoming of the perforation operation is unquestionably absolutely necessary, and will save a large percentage of lives, the more so as these cases are rather common in typhoid fever.

Dr. Hughes scarcely believed it possible to stop intestinal hemorrhage by any operative interference, or, if it be possible, it is surely not possible to tell in which cases operative interference should be instituted. In his experience, hemorrhage in typhoid fever is a bleeding from a number of ulcers much more frequently than it is of bleeding from any one. In the last two cases, dead from hemorrhage, in which he made post-mortem examinations, the bleeding had taken place from the colon, and not from the ileum. Such cases as these are not operable cases. When there has been a sudden single profuse hemorrhage, the site of bleeding is likely to be ileum, while when there has been a series of small hemorrhages culminating finally in one large fatal one, it is more likely that the site of the bleeding is the colon.

DR. MORDECAI PRICE said that as a general thing he believed that when actual violence has been done to the bowel, the ulceration is of the character of simple impinging upon the peritoneum, and, as has been said, a patch has been applied, and if the leakage takes place it is confined to a small area of the peritoneum, and there is ample warning of the danger to the patient. In these cases we have almost assurance that surgery will be a saving of life.

In the other cases in which from some violence or straining, or from some foreign body that comes in contact with the ulcer and produces perforation, general peritonitis and death are likely to result in a very few hours, and unless the lesion is one that has been anticipated, the results of the operation, to be sure, are very doubtful, but surgery should be attempted in these cases.

Dr. Price contended that the danger of transporting cases to the hospital was not so great as that of failing to do so early enough. It would naturally be better to do operations at home if the patients were favorably situated. But the surroundings are often our masters. For instance, many cases to be operated upon come from hovels and without a clean towel or a clean basin in the house. In many cases it is necessary to supply not only the surgery, but also clean bed-linen and bed-clothing. For poverty-stricken patients requiring operation the hospital is unquestionably the best place. The surroundings are better, the nurses are better, the food is better, and the whole *morale* of the case is better.

DR. J. B. ROBERTS said that no modern surgeon, educated in current methods, would hesitate to operate upon a case of perforation in typhoid fever. Of course there are surgeons who, perhaps, have not come quite to the modern standard in practice who might refuse, because they have not become quite convinced of the value of antisepsis and asepsis. The indications seem clear that in any sort of a perforation in the belly the abdomen ought to be opened and the perforation sewed up. The operation will, of course, very often prove fatal. It does not make any difference about statistics in these cases any more than it would in intraperitoneal rupture of the blad-

der. It is the surgeon's duty to do what he can as promptly as possible, and not to be deterred by statistics in surgery or any line of treatment. It is better in the majority of surgical cases to remove the patient to a hospital or some place where proper surroundings can be secured.

DR. G. G. DAVIS said that the question of operation has been settled practically by the physicians themselves, when they state that recovery is virtually impossible without it. The late Dr. William Hunt used to boast that he was the only known case in Philadelphia of recovery from perforation in typhoid fever, without an operation—a fact that would go to show how seldom such a recovery is. The mortality from operations undertaken for typhoid perforation will be very high, at all events, from the earlier ones. The patient who has a perforation is usually in a somewhat advanced stage of the disease, with a weak heart, and is likely to be extremely debilitated. The operation is one that not only requires skill, but exceptional skill. Everyone, perhaps, may not possess the required skill, and certainly the mortality that has heretofore existed does not compare with the results related by Dr. Price.

There is probably nobody in Philadelphia who does more operative work in abdominal affections than does Dr. Joseph Price, and for him to be able to report only three cases of operations after perforations shows that there must occur a large number of perforations in patients who are permitted to die without being given the chance of operation. For that reason the responsibility of operation is one that devolves largely upon the physician.

Dr. Price has raised the question of the effect of the anesthetic on the patient. While in some cases ether does bring up the pulse, at least for a time, it cannnot be maintained that patients do not suffer shock from operations. Almost all operations that are accompanied by anesthesia are productive of greater or less shock, and the truth probably is that prolonged anesthesia does diminish the probability of recovery.

DR. ALFRED STENGEL agreed with the statement that intestinal perforations are of different sorts. In his experience they have very frequently been minute, or accompanied by a localized peritonitis, and rather gradual in their pathologic development, if not in their clinical manifestations.

While anyone who understands the conditions presented will not for a moment doubt the advisability of modern surgery in dealing with intestinal perforation, it must be realized that the operation in itself is one of the extremest difficulty. Very frequently the most successful, the most deft, the most experienced surgeon in this very particular line of surgery will fail to find the lesion or all of the lesion. In some cases there are several perforations, some of which may be found with the greatest difficulty post mortem, and this difficulty will arise in even greater measure to the operating surgeon. Complete resection of the bowel would, of course, obviate the necessity of looking for separate perforations in cases in which a limited part of the bowel is involved; but if trimming and stitching, and not resection are practised, it will be necessary to find each separate perforation. In some cases these are so covered by lymph and without marked extravasation of intestinal contents that some perforations are liable to escape notice. In Dr. Stengel's experience in post-mortem work, the intestinal lesions in cases of large hemorrhage, cases of rapidly fatal hemorrhage, have almost without exception been in the colon near its junction with the ileum, or in the ileum just above the valve. In these cases there are very large ulcers as a rule, and in a very considerable proportion this is the only seat of disease, ulcers being absent or very few in the ileum or lower part of the colon. It would be excessively difficult to manage such a case; and there may be some doubt that operation is indicated in these cases. Intestinal perforation in the course of typhoid fever is not a condition for medical treatment. There have been cases of recovery even with the formation of fistulæ, but these cases are so exceptional that they have practically no weight whatever in the discussion. When intestinal perforation has occurred the case may be considered out of the physician's hands. The question then is whether the surgeon wishes to undertake the operation. The physician's only responsibility in these cases lies in his calling in a surgeon; if the surgeon refuses the operation, the responsibility is upon him.

DR. G. G. DAVIS related the case of a man who was brought into the hospital some two or three years ago, a foreigner, unable to speak English, totally delirious, with hurried, rapid, breathing, very weak pulse and a temperature of about 104°. The abdomen was very much distended and there was dulness in the right iliac fossa. There was absolutely no history to be had. The patient was evidently extremely sick and apparently at the point of death. It was thought that possibly there might be some trouble with the appendix. Operation revealed a distended cecum, while the appendix was found to be somewhat inflamed, but evidently not enough so to account for the general condition. Further investigation showed the small intestine adjacent to the cecum to be agglutinated in a plastic purulent peritonitis. At this point the patient exhibited symptoms of collapse, so that some of the adhesions were broken up, the surrounding area packed with gauze and drained and most of the wound left open. The patient died, and post-mortem examination revealed two perforating typhoid fever ulcers in the neighborhood of the ileo-cecal valve. The case serves to illustrate the difficulties attending operations of this kind. To have persisted in a search for the perforations and to have closed them would have caused death promptly upon the operating table.

Dr. J. C. Wilson said that the great majority of cases of perforating ulcer of the bowel in enteric fever perish promptly from general peritonitis and collapse. The exceptions to this rule are extremely rare. In some few cases of perforation immediate general infection of the peritoneum is prevented by adhesions of the wall of the gut to adjacent viscera. Local peritonitis and abscess-formation, with its attendant dangers to life, result. There are also cases, but their number is few, in which all the signs of peritonitis develop and recovery takes place without subsequent trouble of any kind. It was a case of this sort, seen seven or eight years ago, that led to the communication referred to by Dr. Price. The patient was a girl about nine years of age who, about the twentieth day of the attack, suddenly developed symptoms of peritonitis. Dr. Keen was asked at once to see the patient with the view of operating. The necessary preparations were made, but after some hours, slight improvement having taken place, the operation was deferred until the following day. It was then found that the pain and tympanites had diminished and considerable improvement in the general condition had occurred. The patient made a good recovery without operation. She was treated by opium in full doses. Dr. J. Ewing Mears has suggested that the surgeon has three procedures at his command in the cases of intestinal perforation during enteric fever. First, he may find the lesion, trim out the involved portion of the gut and stitch the perforation; second, he can resect the compromised portion of the gut; and third, in default of being able to satisfactorily carry out either of these plans he may simply make an artificial anus, treat the peritoneum according to the indications in individual cases and wait. Of course these procedures are desperate, but the case is desperate and in ninety-nine out of every hundred accidents of this kind without surgery death is certain. The condition should be approached just as would be a fulminant case of appendicitis. The lesions are in the great majority of instances massed in the neighborhood of the ileo-cecal valve. Perforations rarely occur more than eighteen or twenty inches above that point in the bowel.

In some instances abdominal tenderness, excessive tympanites, tremor and hemorrhage from the bowels precede perforation. These symptoms must always be looked upon as danger-signals. Under such circumstances the possibility that prompt surgical intervention may become necessary is to be considered and it is a good practice for the physician in charge of the case to at once divide the responsibility with a surgeon, who can see the patient at intervals in consultation. The greater number of perforations, however, develop suddenly. When the symptoms of perforation show themselves the case practically passes out of the hands of the physician into those of the surgeon. The condition is so desperate that the surgeon often hesitates to perform an operation attended with so little hope of success. Speaking from the standpoint of the physician, Dr. Wilson contended that under such circumstances the physician is justified no longer in merely requesting, but he should at once demand that the surgeon shall lend his aid in the effort to avert impending death.

Dr. Joseph Price expressed regret that there is not a specialist in intestinal surgery in the world specially equipped and always prepared for emergencies. With the aid of such an operator more cases could no doubt be saved. Thus, in a case of typhoid under observation for two weeks, and running a uniform course, the physician, if a keen clinician, anticipating perforation, will suggest the association of a surgeon as soon as symptoms pointing to that condition arise. If there be not time to associate a surgeon the physician should use a pocket-knife, pulling out the gut and sticking a darning-needle in; then cleansing and draining with gauze. The result will be better than with no operation; but whatever the method used, it must be rapid and simple. It will never do to waterlog patients with ether. In none of the cases recorded did the operation last longer than one hour.

Dr. Price related that he had a great many times opened the abdomen for general suppuration in which he did not even seek the fistula, employing only irrigation and the open treatment. A large proportion of the patients recovered, although many were in collapse. Secondary operations in other cases have given evidence of the fact that ulceration had existed in the primary operation.

Dr. Price referred to a case of multiple perforation seen years ago, in which the patient's condition was so desperate on the table that the ether was withdrawn. The state of the bowel for some 12 inches was bad, but the defect was repaired as well as it could be, as the condition would not justify such extensive resection, and the ileum at a healthy point 20 inches from the ileo-cecal valve was connected with the colon. The woman recovered, and is in good health yet.

Referring to the transportation of these patients, Dr. Price said that his results have always been best in private practice. In a series of over two hundred abdominal sections in alleys and courts, with the nurse sleeping on an ironing-board or three chairs (until he could afford to have a cot taken around), with a cesspool four feet off, and everything calculated to be detrimental, only one case was lost, but such work required an enormous expenditure of vital force. Besides, nurses do not, as a rule, care to go into alleys or courts and do that sort of work, no matter how well they are paid. In a long series of cases the patient's home is to be preferred, if provided with the bare necessities of life, a couple of basins, a tea-kettle and water; but on account of the great amount of time consumed in making visits at long distances, it is more convenient to have one's patients concentrated in one place.

Dr. Price insisted that operation in cases of typhoid perforation to be successful must be prompt; delay is fatal. Allusion was made to the case of a boy who had fallen from a hatchway and developed abscesses in three or more mesenteric glands. It was not thought that the fall was more than a coincidence, not a cause, that the boy was ill, that the typhoid suppuration in the mesenteric glands had been overlooked. Recovery followed section and open treatment. Dr. Price added that he had only recorded those cases that he was satisfied were typhoid. He had also operated on some of stercoral fistula that he is satisfied were typhoid perforations.

DR. J. T. RUGH read a paper entitled

PROFOUND TOXIC EFFECTS FROM DRINKING LARGE AMOUNTS OF STRONG COFFEE.

[See page 549.]

DISCUSSION.

DR. J. B. ROBERTS related a similar case seen ten years ago in a man under treatment for pneumonia. He was convalescing nicely, when suddenly he became very excitable. Dr. Roberts was sent for at night and found the man evidently intoxicated with something, but could not find out with what. The patient had not been taking any alcoholic stimulant of any account. Subsequently, on further inquiry, it was learned that some enterprising druggist had sent the man a sample bottle of bromo-caffein and that he had taken large amounts of it. The diagnosis was then clear. The symptoms had been distinctly those of caffein-poisoning.

DR. J. MADISON TAYLOR said that cases of peculiar susceptibility to drugs often have to do with a variety of causes, among them alterations in conditions of personality. He referred to a case of bromism in which the man became quite maniacal. The mania was of the sudden and violent order and it had been taken into consideration by those who first saw him that he was taking occasionally, for a very simple cause, bromids, which he increased on his own responsibility, with the result of inducing the profound effects referred to.

DR. M. PRICE said that he has observed many cases of nervous excitability, inability to sleep and indigestion and other symptoms attributable to improper food in which investigation showed that coffee was the only substance to which responsibility could be attached; and on avoidance of the stimulant the symptoms disappeared.

DR. JOHN B. ROBERTS read a paper on

THE PERFECT SURGICAL NEEDLE; WITH REMARKS ON COMMON DEFECTS IN NEEDLES.

[See page 583.]

DISCUSSION.

DR. JOSEPH PRICE contended that the resistance encountered in passing needles does not take place at the point mentioned by Dr. Roberts. Erichsen, in his *Military Surgery*, attributes death to tight sutures and suture-tracts. Charles Hunter called attention to the fact that a suture should always fill up the needle-track. With the needle proposed it does not. This needle offers great resistance in its huge belly, between the point and shank of the needle, more so than any needle in use. This will cause more difficulty in penetrating tissues than any other needle in the group presented, more suture-tract abscesses, more liability to clot along the track of the needle, more suppuration, pain and sepsis. In Dr. Price's opinion surgical needles should be fine, straight and sharp, with a perfect point, and without belly and cutting edge. Keith's is the ideal needle, which can be placed nearly everywhere. Tetanus and sepsis have a number of times followed the use of the Baker Brown or Peaslee handled needles—that old bayonet-needle, with a handle, commonly used for perineal work.

DR. G. G. DAVIS said that for certain deeply-lying tissues the Hagedorn needle is pre-eminently suitable and not bad elsewhere. The glover's needle is an absolutely useless needle. While workers in leather may know what they want, it is not good enough for surgeons, because, as sold, it is not polished. It is too much to expect nurses to sharpen three-cornered needles or needles of any kind. Instrument-makers themselves not infrequently fail to furnish well-sharpened needles.

DR. GEO. E. SHOEMAKER said that it is not uncommon to see a man with a towel, trying to push a needle through the skin and uttering imprecations. This is due largely to the oxidization of the needle in boiling. For some time it has been Dr. Shoemaker's practice to sterilize needles by holding the eye in an alcohol flame before the operation; then, throwing them into alcohol until needed. Treated in this way, needles need not be boiled. They always keep bright and pass through the tissues readily; and their use is unattended with complications.

It has been found that neuromata after amputation almost always appear in scar tissue, and are especially fixed against the sawn end of the bone. Senn endeavors to obviate this by amputating the nerve high up in the tissue, and then cutting a V-shaped wedge out of the distal end, uniting the two flaps with sutures so that none of the interior of the nerve-trunk is exposed—all nerve tissue is covered in by the endothelial sheath.—*The Medical Age.*

The regular meeting of the medical section of The Buffalo Academy of Medicine, was held November 10, with this program: "Case of Chronic Diarrhea Successfully Treated by Lavage," Dr. S. A. Dunham.—"Importance of Early Attention to Hypertrophy of the Naso-Pharyngeal Lymphoid Tissue," Dr. F. W. Hinkel.—"Reflex Effects in the Pharynx and Mouth of Intra Nasal Disease," Dr. Horace Clark.

DELAWARE STATE MEDICAL SOCIETY.

Meeting June 9, 1896.

The one hundred and seventh annual meeting of the Delaware State Medical Society was held at Newark, Del., June 9, 1896, President James T. Massey in the chair.

DR. H. G. M. KOLLOCK, of Newark, a member of the committee of arrangements, welcomed the society in a brief address of happily chosen phrases, and the Society then proceeded to the transaction of the regular business.

The following resolutions were offered by the Board of Censors and adopted by a unanimous vote of those present:

WHEREAS, Recent legislation in the State of Delaware provides for a Board of Examiners to protect the people of the State from irregular practitioners; and

WHEREAS, There are a few practicing physicians in the State who violate all laws of decorum in their relations with their patients and the public; therefore,

Resolved, That the Delaware State Medical Society appoint Drs. Willard Springer and P. W. Tomlinson, of Newcastle County; William Marshall and E. W. Cooper, of Kent County; and W. P. Orr and R. G. Ellegood, of Sussex County, a committee to draft a constitution, by-laws and code of ethics for the government of the members of this society.

The following officers were chosen: President, William Orr, of Lewes; vice-president, Willard Springer, of Wilmington; secretary, P. W. Tomlinson, of Wilmington; and treasurer, W. C. Pierce, of Wilmington. Delegates to American Medical Association, Newcastle County: Willard Springer, P. W. Tomlinson, Irving S. Vallandigham, Frank Belville, H. G. M. Kollock; Kent County, William Marshall, James T. Massey, James H. Wilson, L. A. H. Bishop, Nathan Pratt; Sussex County, O. D. Robinson, D. D. Palmer, James A. Hopkins, H. R. Burton, Joseph B. Waples; censors, Newcastle, A. Lowber, F. L. Springer, W. T. Skinner; Kent County, William Ashcraft, P. S. Downs, E. W. Cooper; Sussex County, E. D. Palmer, W. B. Jones, O. D. Robinson. These names were nominated to be presented to the Governor from whom to choose two members of the State Board: R. B. Hopkins, O. D. Robinson, H. R. Burton, J. T. Massey, D. D. Palmer, R. G. Ellegood, P. W. Tomlinson, Willard Springer. Delegates to the Pennsylvania State Medical Association: W. C. Pierce, P. T. Carlick, D. L. Mustard; New York Association, H. J. Stubbs, W. J. Davis, C. R. Layton; New Jersey Association, W. G. Winner, George W. Marshall, R. B. Hopkins; Delaware State Pharmaceutical Association, Smith Cooper, John W. Clifton, W. W. Marsh.

DR. A. T. NEALE read a paper upon

"Contagious Diseases of the Lower Animals and Their Relation to the Human Family."

From the speaker's connection with the United States Experiment Station he was able to speak with clearness upon the prevalence of anthrax and tuberculous diseases in cattle. He gave a brief *resumé* of the present condition of the law in the State relative to these two diseases, and claimed that although the provisions of the law were severe, it was yet practically imperative, from the fact that insufficient provision was made to indemnify for losses. The annual limit is $300, and the first person in whose stock either disease is found is likely to get all of that, leaving nothing for subsequent sufferers. If a man knows that he is liable to the loss of his stock through their condemnation as affected, that a quarantine will be declared involving further loss, and that for all this there will be no compensation, he is very likely to conceal any deaths that may occur among his cattle, bury the corpses upon his land, sell any that show symptoms of illness, and thus spread the infection until it becomes endemic and then epidemic.

If provisions were made under the law for the proper maintenance of a station for the dissemination of preventive means, and if there was a proper compensation allowed for losses from quarantine, etc., all owners of stock would readily report all suspicious cases, and the disease could then be stamped out. The years to come will doubtless show a complete development of a protective inoculation for anthrax and pleuro-pneumonia as vaccination is of small-pox, but the period will be distant so long as there is no fund for such development.

If the laws are inoperative amendments should be sought before the State Legislature to make it operative, and in this line would be one allowing the Governor to employ State funds in the purchase and use of protective vaccines, whether they be those of anthrax or rabies, or any other similar disease, and permission to use funds in the interest of the individual just as he is now empowered to use them in the employment of the sheriff, of constables and of the machinery of the law in general, in the establishment and maintenance of quarantine. Whether the necessary vaccines can and should be purchased in the open market, or whether they should be prepared in a laboratory specially equipped by the State for this purpose is a question for future debate.

Anthrax has been epidemic in Delaware since 1892, and each year new centres of outbreak are developed, many of them at distant points. This spread of the disease must be directly attributed to the inefficient provisions of the State law.

Dr. Neale went into the etiology of the diseases and showed how human health was affected by their prevalence. He said that in his opinion many of the so-called summer complaints in children were directly due to the ingestion of milk or animal food from infected animals, and that more of the minor malaises than are generally thought may be traced to this cause. Although the State Medical Society had already done much in gaining legislation, more remained to be done, and they should not be weary in well doing.

DISCUSSION.

DR. BLACK desired to heartily second all that had been advanced by Dr. Neale. He has himself discovered instances where the contagion has advanced from farm to farm in just the manner described. The protective system should be used for anthrax and tuberculosis as much as for small-pox. Credit was due the State Legislature for what they had already done, but still it was true that lack of means was a hampering condition. In his opinion it was not fair to take a man's goods and subject him to pecuniary loss without any compensation, and any law based upon so unjust a principle would necessarily be more or less inoperative. He understood that an estimate had been made that fully 20 per cent. of the cattle in the State were tuberculous.

DR. NEALE.—In the first 500 cattle tested 27 per cent. were tuberculous, while the second 500 showed 10 per cent. tuberculous. Still this could hardly be taken as a fair average, as these were all cases where the station had gone seeking for tuberculosis. He thought this would furnish no reliable data for the State at large.

DR. BLACK had no doubt but that the origin of much summer complaint and other troubles could be traced to tuberculous milch cows. He advised Pasteurizing or sterilizing all food. If the food was only heated once the bacilli might be destroyed, but the spores would remain, and for absolute safety they too should be annihilated.

DR. VALLANDIGHAM.—The State Medical Society has been making all possible efforts to obtain suitable legislation, but as yet has met with but little success. Still the work has but just been begun, and it must and will go on. It would be well to appoint committees for active work in this direction. It seems in a measure like expending money for results that are not appreciable, but one must consider posterity as well as ourselves.

DR. ELLEGOOD referred to the work done by the last committee on legislation, and suggested it should be continued and act in conjunction with the United States Experiment Station to obtain necessary legislation. This was made as a motion, and carried.

DR. E. W. COOPER spoke briefly upon the limited means of the society, and said they were necessarily compelled to go slow on matters requiring heavy expenditure. But, if present theories were true, it is not only our duty, but as professional men we are under obligations to forward all means to obtain necessary legislation, even if it cause personal inconvenience and self-sacrifice.

DR. JAMES H. WILSON, of Dover, read a paper entitled "SOME OF THE SOURCES OF MALARIA."

DISCUSSION.

DR. JUDSON DALAND.—Modern science has established the fact that malaria is a water-borne disease, and that the air has nothing to do with its development and origin. In my opinion any of the so-called irregular forms are not really due to a double contagion, but merely evince different degrees of the same infection. A small quantity of the poison absorbed into the system will cause constitutional symptoms and act larger on a paroxysm. In many of these cases there is often recovery without treatment. In more, a partial treatment will serve to abort some of the symptoms, and thus an apparently abnormal form of the disease may appear. The malaria in the State is much alike in its causes, about 80 or 90 per cent. being the tertian variety. I think there is no different cause for remittent and intermittent fever, the difference in form being probably due to some lesion in association. Dysentery, when associated with malaria, is due to a double infection, both the malaria bacillus and the amœba coli being present. Still there should be no valid reason why if malaria can produce gastritis that it should not also be able to cause colitis.

As no one had prepared a paper upon the diagnosis of malaria, Dr. W. C. Pierce, of Wilmington, at the request of the society, read a paper upon "THE ORIGIN AND GEOGRAPHICAL DISTRIBUTION OF MALARIA."

DISCUSSION.

DR. C. M. ELLIS, of Elkton, called attention to the fact that malaria had cycles of development, recurring in what might be called an epidemic form at more or less regular intervals. In his own line of practice he had noted three distinct cycles, the last and greatest occurring in the fall of 1886, when in Rising Sun, Md., a town of about 2000 population or less, there was an average of about 300 cases. There was scarcely a family but had one or more cases during the prevalence of the disease. Yet this town is situated at about 600 feet above the level of the sea. In the years 1884, 1885 and 1886, malaria was prevalent all over America. In my opinion the malaria bacillus in some form or other is at the bottom of almost one-third of the diseases in general practice, and complicates almost all of the others. When the malarial affection is at its greatest intensity it dominates all the processes of the human frame. I never yet have seen a case of true remittent fever. In all the cases I have had, generally answering to that type, there has been no eventual doubt but that it was typhoid. I have seen many

cases of so-called malignant malaria, but I have never had any doubt in all but that they were typhoid.

DR. WILSON.—In all the older medical works, all the writers spoke of delirium as a characteristic symptom of remittent fever, but in all of this type I have to admit the actual known presence or the probable presence of typhoid lesions. The differential diagnosis from typhoid was generally made upon the temperature, but since the use of the thermometer has become general, we have found that there can be quite a considerable rise of temperature when the pulse and skin are apparently normal.

DR. JOHN B. BUTLER.—I would like to ask how you would make a diagnosis between continued fevers without abdominal lesions, and typhoid fever, if you accept the theory that there is no remittent form of malarial fever. We have continued fevers without abdominal lesions, and other evidences of typhoid, fevers which run one, two or three weeks, then subside, the patient convalescing without having had the essential evidences of typhoid fever. Shall all such fevers be called typhoid? My experience answers no.

DR. VALLANDIGHAM.—Speaking of the strange forms that malaria may take, I recall a case in my own practice where I was summoned to a case of "bladder trouble." The patient had no apparent heat, no flush nor any serious symptoms, but had a peculiarly changed countenance, almost idiotic in expression, and acted in a manner to correspond. I thought at first that he was malingering, and merely gave some soothing preparation. On the second day there was another attack resembling the first, and the third day showed another recurrence. Then I suspected some form of malaria, and put the patient upon quinin, with immediate improvement to recovery.

DR. C. M. ELLIS.—I thought that it was a general rule in medical practice not to give quinin in prostatic cases, and I understood that this case had such complications.

DR. VALLANDIGHAM.—Perhaps I neglected to state that these symptoms of bladder trouble had occurred a long time previous, but the patient's family, knowing that he had had such trouble, had so diagnosed this attack in calling me.

DR. ELLEGOOD.—I would like to take exception to the general statement that all so-called remittent fever is typhoid. I know that years ago we did have a remittent form of fever in which there were no abdominal lesions. There was also the absence of the characteristic symptoms, such as brown tongue, jactitation, trembling of the muscles, etc. I have known it to occur in large families, say of fifteen members or so, ten or a dozen of them being down at a time. The term typhoid now is made to cover a broad field, and takes in cases that many deny are typhoid. Early in the '50's we did have remittent fever. Of course, we had no thermometer then, and we had to judge by the skin and pulse, but there was an undeniably high fever in the evening, as shown by all external signs. The pulse would be 180 in the afternoon, and would drop to about 100 or 90 in the morning; the fever would last some eighteen hours and remit about six, the exacerbations continuing from seven to twenty-one days.

DR. JUDSON DALAND.—We do not have many cases of malaria in Philadelphia, and the entire epidemic in the Philadelphia hospital for one season was only about seventy cases. Many of these came up from the eastern shore of Maryland, and the cases were usually those of typical intermittent fever. We see so few cases of intermittent fever in Philadelphia that we really know but little more than what we are taught and have read. In all probability, Dr. Ellis' explanation of these fevers is correct, and many of the cases were probably irregular typhoid. I think the word typho-malaria shows the condition. This word has been much objected to, and the question was raised whether the case was one of typhoid or typhoid fever and malaria. I think the word was a good one.

DR. PIERCE.—With reference to remittent fever, the old writers referred to the terrible delirium that went with remittent fevers. Those who have attended a case of so-called remittent fever have found that they have typhoid lesion. The patient will tell you there has been and is no fever, but if you will take a thermometer you will find fewer present. I have never yet seen a case in which there was not a temperature of about 100, although the pulse and the skin would feel nearly normal. I believe Dr. Ellis is correct in saying that remittent fever has been mistaken for typhoid. We know that cases of pneumonia used to be called pleurisy.

The society then adjourned for dinner. On their return Dr. R. B. Hopkins read a paper on

"The Treatment of Malarial Fever."

He referred to the important part played by the cinchona salts in the treatment of malaria, and also to the value of quinin as a remedy. He laid stress upon the necessity of preparing the system to receive these remedies, and advised evacuants, diuretics and diaphoretics, mentioning the mild chloride of mercury and the salines as being preferable. He suggested the application of dry heat to neutralize the peripheral circulation, and, if the paroxysm is prolonged, a hypodermic injection of morphia and atropia. After the paroxysm has subsided, the author has found that ten grains of antikamnia in a little wine will relieve very quickly the headache and reduce the fever. Antipyrine and the other coal tar products are also good, but they must be administered with caution. If the patient be suffering with some organic disease of the heart, the local application of sponging may be resorted to

with good effect, and, in a case of nervousness, the bromides will be found very useful. After giving the purgative, one should endeavor to render the intestinal canal aseptic by using such remedies as salol, menthol and thymol, the effects of which may reach so far as a prophylactic against dysentery or diarrhea, which often follows malarial fever. Quinin should be administered in doses of three grains every one or two hours until the time of the expected paroxysm. A number of other remedies were mentioned by the author as having proven of good service, but in his opinion quinin stood pre-eminent.

No discussion.

By request, Dr. Judson Daland took up the subject of diagnosis of malarial type.

DR. DALAND.—Of course there are the general symptoms of the malarial infection, such as periodicity, etc., which have been enumerated here to-day, but there is only one pathognomonic symptom—the presence of the parasite or the plasmodium of malaria. Still, in this connection, it must not be lost sight of that the malarial parasite is an entity which lives forty-eight hours, and that as an entity it has the privilege to change its appearance as all animals do, through the different cycles of life. There have been cases when its presence was not discovered from the lack of familiarity with its different aspects in its various stages of development. I have here a series of photographs and drawings, showing the appearance of the parasite at different times in its life, showing how it attaches itself to the red corpuscle and increases in size at the expense of the stroma, until finally the pigmented body almost fills the red corpuscle. The nature of the form of the bacillus can readily be recognized when it breaks through the wall of the corpuscle and becomes a free body in the blood. Finally, this body disintegrates, and thus forms the free pigment so often found in the blood of malarious patients. The photographs also clearly show that the parasite multiplies by direct division. There is also shown the presence of a vacuole in the parasite. The theory of the paroxysm is that, when the pigmented body ruptures and disintegrates, the paroxysm of chill and fever is caused.

DR. MARSHALL desired to report a

"Case of Pernicious Anemia.'

He was called in November, 1895, and at first had some difficulty in determining whether the disease was leukemia, Addison's disease or pernicious anemia, symptoms of all being present. The patient was a bank teller, aged thirty-three years. I was called in late at night and found him in an apparent faint, with a pulse of 120 and a temperature of 102°. He had all the appearance of profound anemia. After an unsuccessful attempt to count the blood corpuscles, due to the fact that decomposition had set in in the sample of blood obtained before it reached the Delaware College, I took another sample under the direction of Prof. Chester, and his count showed one white corpuscle to every 235 red in a cubic millimetre, proving beyond a doubt the nature of the disease. This would denote the presence of only about 1,300,000 red corpuscles. On November 26th another test showed 2,500,000 red corpuscles; December 7th, 3,500,000; December 20th, about 3,800,000, and on March 23d, some 4,400,000. I regret that there was no test for hemoglobin at the same time. The treatment used was that of arsenic in Fowler's solution, in doses increasing from ten to twenty-five drops three times daily. Under this treatment there has been a complete recovery, a very flattering result, as shown by a comparison with a number of cases reported in the *Lancet*, where the general termination was very unfavorable. I do not report this case so much from any novelty connected with it as from a desire to call attention to the efficient assistance the medical profession of this State have in the perfect equipment of the Delaware State College, and also to the readiness of the faculty to render any assistance in their power to advance the cause of science and to forward the interests of Delaware medical men.

A case of diabetes mellitus was also reported, in which the Delaware College had been of material assistance in determining the diagnosis. The patient had been passing two gallons of urine every twenty-four hours, and a spectroscopic analysis showed the presence of 8.40 grammes of sugar in every 100 cubic centimetres, or about three-quarters of a pound of sugar every twenty-four hours.

DR. COOPER offered a resolution of thanks to the faculty of the Delaware College for the favors, commending the aid they had given to advance scientific development.

PROF. F. D. CHESTER, of the Delaware State College gave an interesting talk upon the "Use of the Microscope in Verifying Diagnosis," illustrating, by the use of diagrams and the exhibition of instruments, the method of counting the blood corpuscles, and exhibiting slides showing various abnormal conditions. In view of the previous talks upon the malaria parasite and anemia, these points were of great interest, showing how these results spoken of were attained.

DR. C. M. ELLIS read a paper upon

"Puerperal Eclampsia.—The Indications for the Necessity of Artificial Delivery."

The author called special attention to the great danger of the convulsions of pregnancy before term. His experience included eight cases, occurring at different stages of pregnancy, and showed clearly that when a convulsion occurs before term, unless it is of systemic origin, immediate delivery is imperative, without regard to the presence or absence of uterine contractions or the condition of the os as to dilatation. If the convulsions begin early, the uterus should be emptied by the most expeditious method, and all medici-

nal treatment should be secondary to this one great object. This is necessary for the reason that the percentage of fatalities from eclampsia is fully 50 per cent. This high death rate is greatly exceeded when the delivery is not accomplished, or if it is delayed until several convulsions have occurred, or until uterine contraction and dilatation have supervened. Of the eight cases seen by the author, five died and three recovered. Of the five that died premature delivery was effected, one on the sixth day after the initial convulsion, one forty-eight hours after, one eighteen hours after, three others having followed, and the patient being moribund at the time, and one lay in convulsions three days without any attempt at delivery. The experience gained from these eight cases would certainly justify premature delivery.

Dr. Ellis had never seen a death occur before delivery after the operation had been initiated, and he believed the uterus should be evacuated immediately after the first convulsion. When albumin appears in the urine the more imminent is the danger of eclampsia, and, if this accident is threatened, it may be necessary for the attending physician to hasten delivery without waiting for the convulsive seizure. The speaker denounced the indiscriminate use of morphia hypodermatically in cases like these.

DISCUSSION.

DR. GEORGE M. BOYD.—This paper is particularly valuable in that it calls attention to the hygiene of pregnancy, a most important study during gestation, though one that is often neglected. I agree fully with the statements made by Dr. Ellis as to the paramount importance of emptying the uterus without delay, and consider this the point of greatest importance in the treatment of eclampsia. I have seen no particularly ill effects follow upon rapid manual dilatation of the cervix. In one case in which I used this method delivery was brought about in about thirty-five minutes, and in another, where the forceps were used, everything was over in less than an hour. In both cases the patient had a rapid and uneventful recovery. The chief objection to rapid delivery is that of danger to the child, but, in my opinion, the process is as necessary to the safety of the child as to the mother, since death cannot but eventually ensue under too long delay. I have used chloral by the rectum with the most excellent effects where the convulsions were severe, and have often found blood-letting of great use. A third case I recall after a delivery, presenting nothing especially unusual, died on the third or fourth day in convulsions, but here there was a history of previous interstitial nephritis.

DR. TOMLINSON.—I was recently called upon in a case of pregnancy, the woman a primapara, in the eighth month of gestation. I discovered that she had albuminuria. I put her upon diuretics, and veratrum viride six drops every three hours, but with no diminution in the amount of albumen. The patient now began to complain of severe pains in the head, with loss of sight, and, fearing convulsions, I bled her, taking twenty-four ounces from the cephalic vein. In less than twenty-four hours labor came on and the woman was delivered of an eight-months' child. She is now in perfect health, her recovery having been uneventful.

DR. E. S. DWIGHT read a paper upon

"Cardiac Diseases as Encountered in Country Practice, with Brief Reports of a Few Interesting Cases."

[See page 614].

No discussion.

DR. H. J. STUBBS read a paper entitled

"Three Cases of Appendicitis Operated on, One with a Peculiar and Fatal Complication."

Owing to the lateness of the hour there was no discussion.

The Society adjourned to meet the second Tuesday in June, 1897, at Rehoboth, Del.

NEWS AND MISCELLANY.

Dr. Oscar H. Allis, will deliver the thirteenth course under the Mütter Lectureship on Surgical Pathology, College of Physicians of Philadelphia. Subject: "Dislocation of the Major Joints."

SYNOPSIS OF COURSE.

Early Views concerning Muscular Resistance in Dislocation and its Results.

History of Reduction of Dislocation by Manipulation.

The Structures usually involved in Dislocation.

The Mechanism of Dislocation—Characteristic Deformity, Causes; Lesions resulting from improper efforts at reduction.

Demonstration of the various Methods of Reduction by Manipulation.

Dislocations demonstrated as far as possible without preliminary Tenotomy of the Capsule.

The lectures will be given in the hall of the Mütter Museum, at 8 p.m., November 18, 20, 24, 27, 30, and December 4, 7, 8, 14, 16. The medical profession and students of medicine are invited.

Election of a Resident Physician to the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases, N. W. corner Seventeenth and Summer Streets, Philadelphia, for the term of service, January 1, 1897, to January 1, 1898, will be held in December. Applicants for the vacancy will communicate with the secretary of the staff, Dr. Morris J. Lewis, 1316 Locust Street, Philadelphia.